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B.A. I SEM

BASIC PSYCHOLOGICAL PROCESSES

- Brief and Intensive Notes
- Long & Short Answers

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NEP-2020-SYLLABUS

B.A. Semester I Subject: Psychology	
Course Code: A090101T	**Course Title: Basic Psychological Processes**
UNIT I	Psychology: Nature, Scope and Applications; Approaches: Psychodynamic, Behavioristic, Cognitive, Humanistic.
UNIT II(a)	Attention Processes: Selective and Sustained Attention: Nature and Determinants.
UNIT II(b)	Perceptual Processes: Nature and Determinants; Perceptual Organization; Perceptual Illusion.
UNIT III	Learning: Classical Conditioning, Operant Conditioning and Verbal Learning: Methods and Procedures.
UNIT IV	Memory and Forgetting: Stages of Memory: Encoding, Storage and Retrieval; Types of Memory: Sensory, Short Term and Long-Term Memory (Basic Introduction); Forgetting: Interference and Cue- Dependent Forgetting.
UNIT V	Intelligence: Nature and Definition; Concept of IQ; Theories of Intelligence (Introduction of Basic Concepts): Spearman, Thurston, Guilford, Sternberg, Gardner.
UNIT VI	Personality: Definition and Determinants; Approach of Personality (Basic Concepts): Trait approaches (Allport and Cattell); Psychodynamic (Freud); Humanistic (Rogers and Maslow).
UNIT VII	Motivation: Nature and Concept (Needs, Drives, Instincts); Types of Motives: Biological and Social Motives; Pull and Push Mechanism; Intrinsic Motivation.
UNIT VIII	Emotion: Nature of Emotion; Basic Emotions; Expressions of Emotion: Universal Versus Culture Specific; Theories of Emotion: James-Lange, Cannon-Bard, Schachter-Singer.

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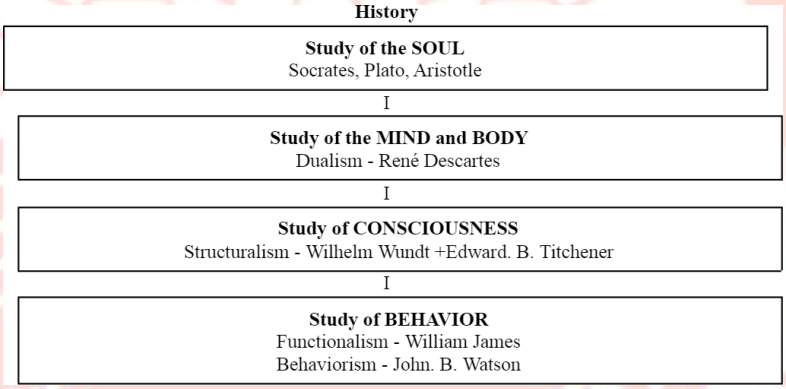
UNIT I

UNIT I	Psychology: Nature, Scope and Applications; Approaches: Psychodynamic, Behavioristic, Cognitive, Humanistic.

The first use of the term "Psychology" is attributed to the German philosopher Rudolph Göckel, who published the '**Psychologia hoc est de hominis perfecyione, Anima, ortu**' in 1898. The term seems to have been used earlier by Marko Marulic in his Latin treatise. The term was popularised by Christian Wolff. The term "psychology" overtook mental philosophy in the middle of 19 century.

Psychology is the scientific study of the mind and mental processes. According to H. D. Hamm **"Psychology is the scientific study of the behavior of humans and animals."** According to Tom Bolling "Psychology is a science of description and application. Psychology is the field of science dedicated to understanding the human mind and behavior. Psychology is derived from 2 Greek and words - 'psyche' and 'logos' which mean 'the mind or the soul' and 'study' respectively. Literally, psychology refers to the study of the soul. This definition is one of the oldest and was proposed by Aristotle.



Early Greek philosophers such as Socrates, Plato and Aristotle explored topics such as pleasure, pain, knowledge, motivation, rationality - which continues to be topics of debate in psychology today. They also considered the origins of mental illness. In the 17th century, French mathematician and philosopher Rene Descartes theorized that the body and mind are separate entities. This concept came to be known as Dualism. According to dualism, the body is a physical entity with scientifically measurable behavior while the mind is a spiritual entity that cannot be measured because it transcends the material world. Thomas Hobbes and John Locke were English philosophers from the 17thcentury who disagreed with the concept of Dualism. They argued saying that sensations, images, thoughts and feelings are physical processes that occur within the brain. This argument brought about a view that holds the mind and the body to be one and the same, later came to be known as monism. Today more psychologists reject the concept of Dualism, as many years of research has indicated that physical and mental aspects of human experience are deeply intertwined.

Psychology as a self-conscious field of experimental study began in 1879, when the first laboratory dedicated to psychological experimentation was founded by German scientist Wilhelm Wundt in Leipzig. Wilhelm Wundt is often considered as the father of psychology. He was the first to refer to himself as a psychologist and wrote the first textbook on psychology.

Wilhelm Wundt believed that the study of consciousness thoughts would be the key to understanding the mind. His approach to the study of mind wash based on systematic and rigorous observation, laying the foundation for modern psychological experimentation. His topics of study included attention span, reaction time, vision, emotion and time perception. His primary method of research was introspection. He laid the groundwork for what later came to be known as the theory of structuralism.

Edward B. Titchener, an English professor and a student of Wilhelm Wundt expanded upon Wundt's ideas and used them to found the theory of structuralism. Structuralism attempted to understand the mind as the sum of different underlying parts and focused on three things -a) individual elements of consciousness b) how these elements are organised into more complex experiences c) how these mental phenomena correlate with physical events. Like Wundt, he used introspection to try to determine the different components of consciousness, however he used a method bound by strict guidelines for the reporting. It was criticized because its subject of interest- the conscious experience - was not easily studied with controlled experimentation. Its reliance on introspection, despite Titchener's rigid guidelines, was criticized for the lack of reliability.

An alternative to structuralism was founded by William James in the late 19th century and is known as functionalism. Built on the anatomy of the mind, functionalism lead to greater concern with the functions of the mind, later to behaviorism. Functionalism considered mental life in behavior in terms of active adaptation to the person's environment. James's approach was more concerned with examining the ways in which the mind adapts to change in changing situations and environments. In functionalism, it is the brain's role to execute functions similar to the way a computer does. Structuralism's reliance on introspection eventually proved it unscientific. Functionalism's emphasis on the scientific study of the adaptive functions of behaviors and mental processes advanced the study of psychology as a science.

PERSPECTIVES RELATED PSYCHOLOGY

The study of psychology in philosophical context dates back to the ancient civilizations of Egypt, Greece, China, India, and Persia. Historians point to the writings of ancient Greek philosophers, such Thales, Plato, and Aristotle (esp. De Anima), as the first significant work to be rich in psychology-related thought. In 1802, French physiologist Pierre Cabanis sketched out the beginnings of physiological psychology with his essay, he interpreted the mind in light of his previous studies of biology, arguing that sensibility and soul are properties of the nervous system. German physician Wilhelm Wundt is known as the "father of experimental psychology," because he founded the first psychological laboratory, at Leipzig University in 1879. Wundt focused on breaking down mental processes into the most basic components, starting a school of psychology that is called structuralism. Edward Titchener was another major structuralist thinker. Functionalism formed as a reaction to the theories of the structuralist school of thought and was heavily influenced by the work of the American philosopher and psychologist William James. In his seminal book, Principles of Psychology, published in 1890, he laid the foundations for many of the questions that psychologists would explore for years to come. Other major functionalist thinkers included John Dewey and Harvey Carr. Other 19th-century contributors to the field include the German psychologist Hermann Ebbinghaus, a pioneer in the experimental study of memory who discovered the learning and forgetting curve at the University of Berlin; and the Russian-Soviet physiologist Ivan Pavlov, who discovered classical conditioning theory of learning whilst investigating the digestive system of dogs. Starting in the 1950s, the experimental techniques set forth by Wundt, James, Ebbinghaus, and others would be reiterated as experimental psychology became increasingly cognitive concerned with information and its processing and, eventually, constituted a part of

the wider cognitive science. In its early years, this development had been seen as a "revolution", as it both responded to and reacted against strains of thought including psychodynamics and behaviorism that had developed in the meantime.

Neuroscience Perspective-Approach that views behavior from the perspective of the brain, the nervous system and other biological functions. Includes the study of heredity and evolution which considered the influence of heredity on behavior and behavioral neuroscience which examines how the brain and nervous system affect behavior. Neuroscience perspective has a broader feel because every behavior can be broken down into which biological components.

The Biological Approach-The study of physiology played a major role in the development of psychology as a separate science. Today, this perspective is known as biological psychology. Sometimes referred to as biopsychology or physiological psychology, this perspective emphasizes the physical and biological bases of behavior. This perspective has grown significantly over the last few decades, especially with advances in our ability to explore and understand the human brain and nervous system. Tools such as MRI scans and PET scans allow researchers to look at the brain under a variety of conditions. Scientists can now look at the effects of brain damage, drugs, and disease in ways that were simply not possible in the past.

Psychodynamic Perspective- This Approach based on the view that behavior is motivated by unconscious inner forces over which the individual has little control. In1961, Freud introduced psychodynamic perspective. The psychodynamic perspective has helped understand everyday phenomena such as aggression, prejudice and has helped to understand and treat some psychological disorders.

Behavioral Perspective- This Approach that suggests that observable, measurable behavior should be the focus of study. Behaviorism grew out of a rejection on the emphasis of the inner workings of the mind. In 1924, John B Watson introduced Behaviorism. According to Watson, it is possible to elicit or produce any desired type of behavior by controlling a person's environment. The behavioral perspective was championed by B. F. Skinner. This perspective has contributed to the area of learning and has helped in treating mental disorders, curbing aggression and ending drug addiction.

Cognitive Perspective- Approach focuses on how people think, understand and know about the world. Formed as a response to Behaviorism. Emphasis on learning how people understand and represent the outside world within them and how our worldly thought processes affects our behavior. Cognitive perspective enables one to compare the human thinking to the workings of a computer which takes information and transforms, stores and retrieves it. Thinking is information processing.

Humanistic Perspective- Approach suggests that all individuals naturally strive to grow, develop and be in control of their lives and behavior. Formed as a response to behaviorism in psychodynamic. In 1951, Carl Rogers introduced the humanistic perspective. In1954, Abraham Maslow introduced the concept of self-actualization. The two of them contributed to this prospective greatly. It emphasizes on free will, the ability to make decisions about one's

own life freely.

Milestones in Psychology

500 BC **Trephining**, cutting a small circular hole in the skill to allow the evil spirits to escape
1690 **John Locke** introduced **tabula rasa** - blank slates
1879 **Wilhelm Wundt** founded the **1st** psychology lab in **Leipzig, Germany**
1890
William James published **Principles of Psychology**
1895 **Functionalist model** formulated
1900 **Sigmund Frued** developed **psychodynamic perspective**
1904 **Ivan Pavlov** won a Nobel prize for his work on digestion that led to the fundamental principles of learning

MAJOR SCHOOLS OF THOUGHT

When psychology first emerged as a science separate from biology and philosophy, the debate over how to describe and explain the human mind and behavior began. The different schools of psychology represent the major theories within the field of psychological science.

Structuralism is widely regarded as the first school of thought in psychology. This outlook focused on breaking down mental processes into the most basic components. Major thinkers associated with structuralism include Wilhelm Wundt and Edward Titchener. The focus of structuralism was on reducing mental processes down into their most basic elements. The structuralisms used techniques such as introspection to analyze the inner processes of the human mind. The introspective experimental technique used by the structuralisms involved having trained observers examine their inner responses. Using this approach, also known as experimental self-observation, experimenters like Wundt trained people to analyze their thoughts as carefully and objectively as possible. While these methods were understandably not the most empirically rigorous, the structuralism school of thought played an important role in the development of experimental psychology.

Functionalism formed as a reaction to the theories of the structuralism school of thought and was heavily influenced by the work of William James. It functioned on the mind's functions and adaptations. In a functionalist approach, for example, instead of trying to understand the underlying processes that cause mental states, the focus would be on understanding the function that those states serve. Gaining a better understanding of the purpose would allow psychologists to better understand how the mind allows people to respond and adapt to their environments. The functionalist school was interested in the purpose of thoughts and behaviors, whereas structuralism was concerned with the elements that make up consciousness. While functionalism largely disappeared as a school of thought, its influence persisted in applied psychology, behaviorism, and educational psychology. Unlike some of the other well-known schools of thought in psychology, functionalism is not associated with a single dominant theorist. Instead, a number of functionalist thinkers are associated with this outlook, including John Dewey, James Rowland Angell, and Harvey Carr.

School of Psychology	Description	Important Contributors
Structuralism	Uses the method of introspection to identify the basic elements or "structures" of psychological experience	Wilhelm Wundt, Edward B. Titchener
Functionalism	Attempts to understand why animals and humans have developed the particular psychological aspects that they currently possess	William James
Psychodynamic	Focuses on the role of our unconscious thoughts, feelings, and memories and our early childhood experiences in determining behaviour	Sigmund Freud, Carl Jung, Alfred Adler, Erik Erickson
Behaviourism	Based on the premise that it is not possible to objectively study the mind, and therefore that psychologists should limit their attention to the study of behaviour itself	John B. Watson, B. F. Skinner
Cognitive	The study of mental processes, including perception, thinking, memory, and judgments	Hermann Ebbinghaus, Sir Frederic Bartlett, Jean Piaget
Social-cultural	The study of how the social situations and the cultures in which people find themselves influence thinking and behaviour	Fritz Heider, Leon Festinger, Stanley Schachter

The Most Important Approaches (Schools) of Psychology.

Gestalt Psychology was a school of psychology based upon the idea that people experience things as unified wholes. This approach to psychology began in Germany and Austria during the late 19th century in response to the molecular approach of structuralism. Some thinkers associated with the Gestalt school of thought included Max Wertheimer, Wolfgang Köhler, and Kurt Koffka. Instead of breaking down thoughts and behavior to their smallest elements, the gestalt psychologists believed that you must look at the whole of experience. According to Gestalt thinkers, the whole is greater than the sum of its parts, a philosophy known as holism. Some examples of Gestalt thinking include explanations for optical phenomena, such as visual illusions. Wertheimer described the phi phenomenon by observing how alternating railway lights created the illusion of movement. The phenomenon suggests that a succession of images seen in rapid sequence are perceived as moving.

Behaviorism became a dominant school of thought during the 1950s. It was based upon the work of thinkers such as John B. Watson, Ivan Pavlov, and B. F. Skinner. Behaviorism suggests that all behavior can be explained by environmental causes rather than by internal forces. Behaviorism is focused on *observable behavior*. Examples of behavioral theories that emerged during this time include:

- **Classical conditioning**: This is a type of learning that involves associating a previously neutral stimulus with a stimulus that naturally and automatically triggers a response. For example, pairing the sound of a bell with the presentation of food. After an association is formed, the previously neutral stimulus will produce the same response as the natural stimulus.
- **Operant conditioning**: This type of learning involves using rewards and punishments to create an association between the behavior and the consequences of that behavior.

The behavioral school of psychology significantly influenced the course of psychology. Many ideas and techniques that emerged from this school of thought are still widely used today. Behavioral training, token economies, aversion therapy, and other methods are frequently used in psychotherapy and behavior modification programs.

Psychoanalytic is a school of psychology founded by Sigmund Freud. This school of thought

emphasized the influence of the unconscious mind on behavior. Other major psychoanalytic thinkers included Anna Freud and Otto Rank and neo-Freudians such as Erik Erikson, Alfred Adler, and Karen Horney. Freud believed that the human mind was composed of three elements: the id, ego, and superego.

- **The id** consists of primal urges.
- **The ego** is the component of personality charged with dealing with reality.
- **The superego** is the part of the personality that holds all the ideals and values we internalize from our parents and culture.

Freud believed that the interaction of these three elements was what led to all of the complex human behaviors. Other important theories within the psychoanalytic school included the idea of the conscious and unconscious, Freud's psychosexual approach to personality development, and the concept of life and death instincts. Freud's work also played an important role in the development of talk therapy as an approach to treating mental illness. Many traditional Freudian approaches to treatment are no longer in favor, but modern psychoanalytic therapy continues to play an important role in psychology today. Research has shown that using self-examination can play an important role in emotional growth.

Humanistic School of psychology developed as a response to psychoanalysis and behaviorism. The development of this school of thought in psychology was heavily influenced by the work of humanist thinkers such as Abraham Maslow, Carl Rogers, and Clark Moustakas. While early schools of thought were primarily centered on abnormal human behavior, humanistic psychology differed considerably in its emphasis on helping people achieve and fulfill their potential. Humanistic psychology instead focused on topics such as:

- Becoming a fully functioning person: A person who is in touch with their innermost desires and trusts their own instincts
- Individual free will: The capacity that individuals have to make choices, select courses of action, and control their own lives
- Hierarchy of needs: A theory introduced by Maslow suggesting that people were motivated by a series of increasingly complex needs, starting with their basic physiological needs up to the need to achieve an individual's full potential
- Peak experiences: Moments of pure, transcendent joy that play an important part in the reaching self-actualization
- Self-actualization: A state of reaching one's full potential

Cognitive School of psychology is the school of psychology that studies mental processes, including how people think, perceive, remember and learn. As part of the larger field of cognitive science, this branch of psychology is related to other disciplines such as neuroscience, philosophy, and linguistics. Cognitive psychology emerged during the 1950s, partly as a response to behaviorism. Critics of behaviorism noted that it failed to account for how internal processes impacted behavior.

Examples of theories that grew out of the cognitive school of thought include:

- Stages of cognitive development: A theory proposed by Jean Piaget, which suggested that children go through a series of progressive stages of intellectual development.
- Sociocultural theory: This theory, introduced by Lev Vygotsky, looked at how the interaction of cultural and social factors contributed to cognitive development.
- Informational processing theory: This theory suggests that the mind functions much like a

computer to process and interpret information about the world.

Cognitive-behavioral therapy (CBT) was also heavily influenced by this psychological perspective. CBT is an approach to treatment that focuses on how automatic negative thought patterns influence behavior and psychological problems.

Evolutionary School of Psychology, emphasizes on Evolution or change over time occurs through the processes of natural and sexual selection. In response to problems in our environment, we adapt both physically and psychologically to ensure our survival and reproduction. Sexual selection theory describes how evolution has shaped us to provide a mating advantage rather than just a survival advantage and occurs through two distinct pathways: intrasexual competition and intersexual selection. Gene selection theory, the modern explanation behind evolutionary biology, occurs through the desire for gene replication. Evolutionary psychology connects evolutionary principles with modern psychology and focuses primarily on psychological adaptations: changes in the way we think in order to improve our survival. Two major evolutionary psychological theories are described: Sexual strategies theory describes the psychology of human mating strategies and the ways in which women and men differ in those strategies. Error management theory describes the evolution of biases in the way we think about everything.

Applied Psychology

Applied Psychology is the use of psychological principles to solve practical problems. It also refers to the various specializations and professions that represent what psychologists do. Some of the specialized fields/careers in Psychology:

1. **Clinical Psychology** explores the causes, diagnosis, treatment and prevention of different types of behavioral and emotional disorders.
2. **Industrial/Organizational Psychology** studies workplace's behaviour and applies psychological principles to enhance performance and well-being of employees, and to ensure profitability of organizations.
3. **Social Psychology** focuses on the influence of social situation on people's behaviour.
4. **Engineering Psychology** uses psychological principles to design user-friendly products and equipment. It considers human factors in producing ergonomic machines to ensure optimal performance and comfort.
5. **Developmental Psychology** studies the physical, cognitive, social and psychological changes in people throughout their lifespan, from conception to old age.
6. **Consumer Psychology** applies psychological principles to product packaging and marketing methods to influence consumer behaviour and purchase decisions.
7. **Environmental Psychology** studies how crowding, designs and environmental factors influence behaviour.
8. **Physiological Psychology** studies the interaction of the brain, genetics and the body systems on behaviour.
9. **Educational Psychology** helps students with social, emotional and academic issues. It also assists to develop instructional methods needed for academic excellence.
10. **Forensic Psychology** applies psychological principles in legal and justice system to prevent, investigate, and solve crime, and give expert opinion in court cases.
11. **Counselling Psychology** helps people to adjust, adapt, and cope with personal and interpersonal problems in areas like education, marriage and career.
12. **Cognitive Psychology** studies perception, thinking, reasoning, language, memory and decision making.
13. **Sports Psychology** uses psychological theories and knowledge to enhance athletic

performance.

14. **Positive Psychology** seeks to identify and promote those qualities that can lead to one's fulfillment in life.

15. **Political Psychology** explains political behaviour and uses psychological principles to influence voters.

Although psychology has changed dramatically over its history, the most important questions that psychologists address have remained constant. Some of these questions follow, and we will discuss them both in this chapter and in the chapters to come:

- **Nature versus nurture.** Are genes or environment most influential in determining the behavior of individuals and in accounting for differences among people? Most scientists now agree that both genes and environment play crucial roles in most human behaviors, and yet we still have much to learn about how nature (our biological makeup) and nurture (the experiences that we have during our lives) work together (Harris, 1998; Pinker, 2002). *The proportion of the observed differences of characteristics among people (e.g., in terms of their height, intelligence, or optimism) that is due to genetics* is known as the **heritability of the characteristic**, and we will make much use of this term in the chapters to come. We will see, for example, that the heritability of intelligence is very high (about .85 out of 1.0) and that the heritability of extraversion is about .50. But we will also see that nature and nurture interact in complex ways, making the question "Is it nature or is it nurture?" very difficult to answer.
- **Free will versus determinism.** This question concerns the extent to which people have control over their own actions. Are we the products of our environment, guided by forces out of our control, or are we able to choose the behaviors we engage in? Most of us like to believe in free will, that we are able to do what we want—for instance, that we could get up right now and go fishing. And our legal system is premised on the concept of free will; we punish criminals because we believe that they have choice over their behaviors and freely choose to disobey the law. But as we will discuss later in the research focus in this section, recent research has suggested that we may have less control over our own behavior than we think we do (Wegner, 2002).
- **Accuracy versus inaccuracy.** To what extent are humans good information processors? Although it appears that people are good enough to make sense of the world around them and to make decent decisions (Fiske, 2003), they are far from perfect. Human judgment is sometimes compromised by inaccuracies in our thinking styles and by our motivations and emotions. For instance, our judgment may be affected by our desires to gain material wealth and to see ourselves positively and by emotional responses to the events that happen to us. Many studies have explored decision making in crisis situations such as natural disasters, or human error or criminal action, such as in the cases of the Tylenol poisoning, the Maple Leaf meats listeriosis outbreak, the SARS epidemic or the Lac-Mégantic train derailment

Goals of Psychological Research - Like any scientific research, psychological enquiry has the following goals: description, prediction, explanation, and control of behavior, and application of knowledge so generated, in an objective manner. Let us try to understand the meaning of these terms.

1. **Description :** In a psychological study, we attempt to describe a behavior or a phenomenon as accurately as possible. This helps in distinguishing a particular behavior from other behaviors.
2. **Prediction :** The second goal of scientific enquiry is prediction of behavior. If you are able to understand and describe the behavior accurately, you come to know the relationship of a particular behavior with other types of behaviors, events, or phenomena.
3. **Explanation :** The third goal of psychological enquiry is to know the causal factors or

determinants of behavior. Psychologists are primarily interested in knowing the factors that make behavior occur.

4. **Control :** If you are able to explain why a particular behavior occurs, you can control that behavior by making changes in its antecedent conditions. Control refers to three things: making a particular behavior happen, reducing it, or enhancing it.
5. **Application :** The final goal of the scientific enquiry is to bring out positive changes in the lives of people. Psychological research is conducted to solve problems in various settings. Because of these efforts the quality of life of people is a major concern of psychologists.

Methods in Psychology- Psychologists use a variety of methods like Observation, Experimental, Correlational, Survey, Psychological Testing, and Case Study to collect data. The aim of this section is to guide you to select the methods which may be appropriate for different research purposes.

1. Observational Method- Observation is a very powerful tool of psychological enquiry. It is an effective method of describing behavior. In our daily life, we remain busy with observing numerous things throughout the day. A scientific observation differs from day-to-day observation in many respects.

Types of Observation- Observation can be of the following types :

(a)Naturalistic vs Controlled Observation : When observations are done in a natural or real-life settings (in the above example, it was a school in which observation was made), it is called naturalistic observation. In this case the observer makes no effort to control or manipulate the situation for making an observation. This type of observation is conducted in hospitals, homes, schools, day care centers, etc.

(b)Non-Participant vs Participant Observation : Observation can be done in two ways. One, you may decide to observe the person or event from a distance. Two, the observer may become part of the group being observed. In the first case, the person being observed may not be aware that s/he is being observed.

2. Experimental Method- Experiments are generally conducted to establish cause-effect relationship between two sets of events or variables in a controlled setting. It is a carefully regulated procedure in which changes are made in one factor and its effect is studied on another factor, while keeping other related factors constant. In the experiment, cause is the event being changed or manipulated. Effect is the behavior that changes because of the manipulation.

3. Experimental and Control Groups-Experiments generally involve one or more experimental groups and one or more control groups. An experimental group is a group in which members of the group are exposed to independent variable manipulation. The control group is a comparison group that is treated in every way like the experimental group except that the manipulated variable is absent in it.

4. Questionnaire Method- The questionnaire is the most common, simple, versatile, and low-cost self-report method of collecting information. It consists of a predetermined set of questions. The respondent has to read the questions and mark the answers on paper rather than respond verbally to the interviewer. They are in some ways like highly structured interviews. Questionnaires can be distributed to a group of persons at a time who write down their answers to the questions and return to the researcher or can be sent through mail.

Very Short Questions/True Facts (One Sentance) (One Sentence):

1. The word psychology derives from the two Greek words that are psyche that means

"life", "soul", or "mind", and logia means "the study of ". So, it simply means that psychology is the study of the mind.

2. Psychology explains the mental processes and behavior of individuals. It is the scientific study of behavior and mental processes. It involves the study of thought, behavior, mind, and the subconscious neurological bases of behavior.
3. In psychology, there is a lot to deal with social cognition. It deals with the human mind and behavior. In psychology, there is a study of social behaviors, human development, and emotions. That's why psychology is considered as a social science. It is different from the other social sciences such as economics, anthropology, sociology, and political science.
4. Wilhelm Maximilian Wundt is acclaimed as the father of experimental psychology. He was a philosopher, professor, and German psychologist.
5. Psychophysics can be defined as the scientific study of the relation between stimulus and sensation.
6. Individual differences are the less or more enduring psychological characteristics that discriminate one person from another. It helps to define the individuality of each person.
7. Mind-body Dualism is a view that both body and mind exist as different entities. It is a philosophical view that denotes mind and body are distinct and separable.
8. Physiognomy is a practice of accessing someone's personality by their outer appearance, mainly the face. It is an idea that it is possible to assess the personality of someone from their facial characteristics.
9. In 1890, William James published the first work about brain activity patterns. William James was an American philosopher and psychologist.
10. The principles of psychology is a book about psychology published in 1890 and written by an American psychologist, William James.

Short Questions (100-120 words)

1.What was the first ever definition of Psychology?

The first ever definition of psychology was the ‘study of soul’.

The word "psychology" is the combination of two terms- study (ology) and soul (psyche), or mind. The derivation of the word from Latin gives it this clear and obvious meaning. "Psyche" is defined as:

1. The spirit or soul.
2. The human mind.
3. In psychoanalysis, the mind functioning as the center of thought, emotion, and behavior.

And defining "soul":

1. the spiritual or immortal elements in a person.
2. a person's mental or moral or emotional nature.

Most of us would agree we have a "psyche" per the above definitions in the sense of mind, thought, and emotions. Most would also agree they have a "soul" per the second definition above relating to man's mental, moral or emotional nature. We might all have different notions about what these ultimately are, but few could sanely disagree they exist.

According to American Psychological Association (APA), Psychology is the scientific study of the behavior of individuals and their mental processes.

2. Define Psychology.

Psychology is the study of mental processes (cognitive processes) and behavior.

3. Who was the founder of Behaviorism?

John Broadus Watson was the founder of behaviorism.

4.Define Psychology as the science of Consciousness.

William James proposed that psychology must be considered the science of consciousness. Consciousness refers to your individual awareness of your unique thoughts, memories, feelings, sensations, and environment. Your conscious experiences are constantly shifting and changing.

5.What are the different goals of Psychology?

The goals of psychology are description, explanation, prediction and modification of behavior.

6.Briefly explain Industrial and General Psychology.

Industrial Psychology is a scientific study of employees, workplaces, organizations and organizational behavior. Industrial psychology is also known as work psychology, organizational psychology or I-O psychology. An Industrial psychologist contributes by improving the workplaces, satisfaction and motivation levels of the employees, and helping the overall productivity of the organization.

General psychology offers an introduction and overview of the field of psychology. General psychology usually covers the history of psychology, basic psychology research methods, development, emotions, motivations, personality, perception, and much more. The topics covered in an introduction to psychology course encompass the subject matter of general psychology. This division of the APA strives to help teachers and students of psychology access the best resources and information needed for the teaching of psychology. The division offers free access to a number of teaching materials and promotes excellence in teaching through awards for excellence, educational lectures, and teaching programs.

7.What are the responsibilities of Criminal Psychologists?

A criminal psychologist is a professional that studies the behaviors and thoughts of criminals. A large part of what a criminal psychologist does is studying why people commit crimes. However, they may also be asked to assess criminals in order to evaluate the risk of recidivism (how likely the person is to re-offend in the future) or make educated guesses about the actions that a criminal may have taken after committing a crime.

8.What is the difference between a Clinical and Educational Psychologist?

A clinical psychologist is a mental health professional with highly specialized training in the diagnosis and psychological treatment of mental, behavioral and emotional illnesses while educational psychologists study children of all ages and how they learn. While investigating how children process emotional, social and cognitive stimuli, they make assessments based on the child's reactions to stimuli. They use this analysis to identify learning, social and behavioral issues that impede children's learning.

9. Provide a brief explanation of the Psychodynamic Approach in psychology.

The Psychodynamic Approach The psychodynamic approach originated with the work of Sigmund Freud. This perspective emphasizes the role of the unconscious mind, early childhood experiences, and interpersonal relationships to explain human behavior and to treat people suffering from mental illnesses. There are many different ways to think about human thought and behavior. The many perspectives in modern psychology provide researchers and students a way to approach different problems and find new ways to explain and predict human behavior as well as develop new treatment approaches for problem behaviors. Freud's understanding of the mind was largely based on interpretive methods, introspection and clinical observations, and was focused in particular on resolving unconscious conflict, mental distress and psychopathology. Freud's theories became very well-known, largely because they tackled subjects such as sexuality, repression, and the unconscious mind as general aspects of psychological

development. These were largely considered taboo topics at the time, and Freud provided a catalyst for the ideas to be openly discussed in polite society. Clinically, Freud helped to pioneer the method of free association and a therapeutic interest in dreams. Freud had a significant influence on Swiss psychiatrist Carl Jung, whose analytical psychology became an alternative form of depth psychology. Other well-known psychoanalytic thinkers of the mid-twentieth century included German-American psychologist Erik Erickson, Austrian-British psychoanalyst Melanie Klein, English psychoanalyst and physician D. W. Winnicott, German psychologist Karen Horney, German-born psychologist and philosopher Erich Fromm, English psychiatrist John Bowlby and Sigmund Freud's daughter, psychoanalyst Anna Freud. Throughout the 20th century, psychoanalysis evolved into diverse schools of thought, most of which may be classed as Neo-Freudians.

10.Discuss the Cognitive school of Psychology. (Refer to page no. 8 and 9)

Long/Extensive Questions (3 to 5 Pages)

1. Explain the Goals of Psychology with the help of examples. (Refer to page no. 11)
2. Define Psychology. Explain its different branches. (Refer to page no. 3, 9, and 10 respectively)
3. How do structuralism and functionalism differ? (Refer to page no. 6)
4. Explain the schools of psychology in detail. (Refer to page no. 6, 7, 8, and 9)
5. What are some of the specialized fields/careers in Psychology? (Refer to page no. 9, and 10)
6. What are the key elements of psychodynamic psychology. (Refer to page no. 8)
7. Provide an in-depth explanation of the observation methods used in psychology, highlighting their different types, and key features.

Psychologists use a variety of methods like Observation, Experimental, Correlational, Survey, Psychological Testing, and Case Study to collect data. The aim of this section is to guide you to select the methods which may be appropriate for different research purposes.

Observational Method- Observation is a very powerful tool of psychological enquiry. It is an effective method of describing behavior. In our daily life, we remain busy with observing numerous things throughout the day. Many times, we do not take notice of what we are seeing or what we have seen. We see but we do not observe. We remain aware of only a few things that we see daily. Have you experienced such a thing? You may also have experienced that if you carefully observe a person or event for some time, you come to know many interesting things about the person or the event. A scientific observation differs from day-to-day observation in many respects. These are :

(a) Selection : Psychologists do not observe all the behavior that they encounter. Rather, they select a particular behavior for observation. For example, you may be interested to know how student studying in B.A. spend their time in College. Two things are possible at this stage. As a researcher, you might think that you have a fairly good idea about what happens in College. You might prepare a list of activities and go to the College with a view to finding out their occurrences. Alternatively, you might think that you do not know what happens in the College and, by your observation you would like to discover it.

(b) Recording : While observing, a researcher records the selected behavior using different means, such as marking tallies for the already identified behavior whenever they occur, taking notes describing each activity in greater detail using short hand or symbols, photographs, video recording, etc.

(c) Analysis of Data : After the observations have been made, psychologists analyse whatever

they have recorded with a view to derive some meaning out of it. It is important to know that making good observations is a skill. A good observer knows what s/he is looking for, whom s/he wants to observe, when and where the observation needs to be made, in what form the observation will be recorded, and what methods will be used to analyse the observed behavior.

Types of Observation- Observation can be of the following types :

(c) Naturalistic vs Controlled Observation : When observations are done in a natural or real-life settings (in the above example, it was a school in which observation was made), it is called naturalistic observation. In this case the observer makes no effort to control or manipulate the situation for making an observation. This type of observation is conducted in hospitals, homes, schools, day care centers, etc. However, many a times you might need to control certain factors that determine behavior as they are not the focus of your study. For this reason, many of the studies in psychology are conducted in the laboratory. For example, if you read Box 2.1, you will come to know that smoke could only be introduced in a controlled laboratory situation. This type of observation, called Controlled Laboratory Observation, actually, is obtained in laboratory experiments.

(d) Non-Participant vs Participant Observation : Observation can be done in two ways. One, you may decide to observe the person or event from a distance. Two, the observer may become part of the group being observed. In the first case, the person being observed may not be aware that s/he is being observed. For example, you want to observe the pattern of interaction between teachers and students in a particular class. There are many ways of achieving this goal. You can install a video camera to record the classroom activities, which you can see later and analyse. Alternatively, you may decide to sit in a corner of the class without interfering or participating in their everyday activities. This type of observation is called non-participant observation. The danger in this type of setup is that the very fact that someone (an outsider) is sitting and observing may bring a change in the behavior of students and the teacher. In participant observation, the observer becomes a part of the school or the group of people being observed. In participant observation, the observer takes some time to establish a rapport with the group so that they start accepting her/him as one of the group members. However, the degree of involvement of the observer with the group being observed would vary depending upon the focus of the study.

The advantage of the observation method is that it enables the researcher to study people and their behavior in a naturalistic situation, as it occurs. However, the observation method is labour intensive, time consuming, and is susceptible to the observer's bias. Our observation is influenced by our values and beliefs about the person or the event. You are familiar with the popular saying: "We see things as we are and not as things are". Because of our biases we may interpret things in different way than what the participants may actually mean. Therefore, the observer should record the behavior as it happens and should not interpret the behavior at the time of observation itself.

8. Discuss Experimental Method in detail.

Experiments are generally conducted to establish cause-effect relationship between two sets of events or variables in a controlled setting. It is a carefully regulated procedure in which changes are made in one factor and its effect is studied on another factor, while keeping other related factors constant. In the experiment, cause is the event being changed or manipulated. Effect is the behavior that changes because of the manipulation. The **What is Variable**? You read earlier that in the experimental method, a researcher attempts to establish causal relationship between two variables. What is a variable? Any stimulus or event which varies, that is, it takes on different values (or changes) and can be measured is a variable. An object

by itself is not a variable. But its attributes are. For example, the pen that you use for writing is NOT a variable. But there are varieties of pens available in different shapes, sizes, and colour. All of these are variables. The room in which you are sitting is NOT a variable but its size is as there are rooms of different sizes. The height of the individuals (5' to 6') is another variable. Similarly, people of different races have different colours. Young people have started dyeing their hair in different colours. Thus, colour of hair becomes a variable. Intelligence is a variable (there are people with varying levels of intelligence — high, moderate, low).

Variables are of many types. We will however focus on **independent and dependent** variables. Independent variable is that variable which is manipulated or altered or its strength varied by the researcher in the experiment. It is the effect of this change in the variable which the researcher wants to observe or note in the study. In the experiment conducted by Latane and Darley, the researchers wanted to examine the effect of the presence of other persons on reporting of the smoke. The independent variable was presence or absence of other persons in the room. The variables on which the effect of independent variable is observed is called dependent variable. Dependent variable represents the phenomenon the researcher desires to explain. It is expected that change in the dependent variable will ensue from changes in the independent variable. The frequency of reporting of smoke in the above case was the dependent variable. Thus, the independent variable is the cause, and dependent variable the effect in any experimental situation. One must remember that independent and dependent variables are interdependent. Neither of them can be defined without the other. Also, independent variable chosen by the researcher is not the only variable that influences the dependent variable. Any behavioral event contains many variables. It also takes place within a context. Independent and dependent variables are chosen because of the researcher's theoretical interest. However, there are many other relevant or extraneous variables that influence the dependent variable, but the researcher may not be interested in examining their effects. These extraneous variables need to be controlled in an experiment so that a researcher is able to pin-point the cause-and-effect relationship between independent and dependent variables.

9: What do you understand by Experimental and Control Groups. Explain in detail.

Experiments generally involve one or more experimental groups and one or more control groups. An experimental group is a group in which members of the group are exposed to independent variable manipulation. The control group is a comparison group that is treated in every way like the experimental group except that the manipulated variable is absent in it. For example, in the study by Latane and Darley, there were two experimental groups and one control group. As you may have noted, the participants in the study were sent to three types of rooms. In one room no one was present (control group). In the other two rooms, two persons were already seated (experimental groups). Of the two experimental groups, one group was instructed not to do anything when smoke filled in the room. The other group was not given any instructions. After the experimental manipulation had occured the performance of the control group measured in terms of reporting of smoke was compared with that of the experimental group. It was found that the control group participants reported in maximum numbers about the emergency, followed by the first experimental group members where the participants were not got any instructions, and the second experimental group (consisting of confederates) reported the emergency situation, the least. It should be noted that in an experiment, except for the experimental manipulation, other conditions are kept constant for both experimental and control groups. One attempts to control all those relevant variables which can influence the dependent variable. For example, the speed with which smoke started entering the rooms, the total amount of smoke in the rooms, physical and other conditions of the rooms were similar in case of all the three groups. The distribution of participants to experimental and control groups was done randomly, a method that ensures that each person has an equal chance of being included in any of the groups. If in one group the experimenter

had included only males and in the other group females, the results obtained in the study, could be due to the differences in gender rather than due to experimental manipulation. All relevant variables in experimental studies that might influence the dependent variable need to be controlled. These are of three major types: organismic variables (such as anxiety, intelligence, personality, etc.), situational or environmental variables operating at the time of conducting the experiment (such as noise, temperature, humidity), and sequential variables. The sequence related variables assume significance when the participants in experiments are required to be tested in several conditions. Exposure to many conditions may result in experimental fatigue, or practice effects, which may influence the results of the study and make the interpretation of the findings difficult.

In order to control relevant variables, experimenters use several control techniques. Some illustrations are given below.

1. Since the goal of an experiment is to minimize extraneous variables, the best way to handle this problem is to eliminate them from the experimental setting. For example, the experiment may be conducted in a sound-proof and air-conditioned room to eliminate the effect of noise and temperature.
2. Elimination is not always possible. In such cases, effort should be made to hold them constant so that their effect remains the same throughout the experiment.
3. For controlling organismic (e.g., fear, motivation) and background variables (such as rural/urban, caste, socioeconomic status) matching is also used. In this procedure the relevant variables in the two groups are equated or are held constant by taking matched pairs across conditions of the experiment.
4. Counter-balancing technique is used to minimize the sequence effect. Suppose there are two tasks to be given in an experiment. Rather than giving the two tasks in the same sequence the experimenter may interchange the order of the tasks. Thus, half of the group may receive the tasks in the order of A and B while the other half in order of B and A or the same individual may be given the task in A, B, B, A order.
5. Random assignment of participants to different groups eliminates any potential systematic differences between groups.

The strength of a well-designed experiment is that it can provide, relatively speaking, convincing evidence of a cause-effect relationship between two or more variables. However, experiments are often conducted in a highly controlled laboratory situation. In this sense, they only simulate situations that exist in the outside world. They are frequently criticized for this reason. The experiments may produce results that do not generalize well, or apply to real situations. In other words, they have low external validity. Another limitation of the laboratory experiment is that it is not always feasible to study a particular problem experimentally. For example, an experiment to study the effect of nutritional deficiency on intelligence level of children cannot be conducted as it would be ethically wrong to starve anyone. The third problem is that it is difficult to know and control all the relevant variables.

If a researcher wants to have high generalisability or to conduct studies which are not possible in laboratory settings, s/he may go to the field or the natural setting where the particular phenomenon actually exists. In other words, s/he may conduct a field experiment. For example, a researcher may want to know which method would lead to better learning among students—lecture or demonstration method. For this, a researcher may prefer to conduct an experiment in the school. The researcher may select two groups of participants; teach one group by demonstration method and another group by the normal teaching method for some time. S/he may compare their performance at the end of the learning session. In such types of experiments, the control over relevant variables is less than what we find in laboratory experiments. Also, it is more time consuming and expensive.

10. Provide a detailed discussion on the questionnaire method in psychology with examples.

The questionnaire is the most common, simple, versatile, and low-cost self-report method of collecting information. It consists of a predetermined set of questions. The respondent has to read the questions and mark the answers on paper rather than respond verbally to the interviewer. They are in some ways like highly structured interviews. Questionnaires can be distributed to a group of persons at a time who write down their answers to the questions and return to the researcher or can be sent through mail. Generally, two types of questions are used in the questionnaire: open-ended and closed ended. With open-ended questions, the respondent is free to write whatever answer s/he considers appropriate. In the closed ended type, the questions and their probable answers are given and the respondent is required to select the correct answer. Examples of closed-ended questions require responses like: Yes/No, True/False, Multiple choice, or using a rating scale. In case of rating scale, a statement is given and the respondent is asked to give her/his views on a 3-point (Agree, Undecided, Disagree), or 5-point (Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree) or 7-point, 9-point, 11- point or 13-point scale. In some cases, the participants are asked to rank a number of things in a preferential order. The questionnaire is used for collecting background and demographic information, information about past behavior, attitudes and opinions, knowledge about a particular topic, and expectations and aspirations of the persons. Sometimes a survey is conducted by sending the questionnaire by mail. The main problem of a mailed questionnaire is poor response from the respondents.

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UNIT II (a)

UNIT II (a)	Attention Processes: Selective and Sustained Attention: Nature and Determinants; Perceptual Processes: Nature and Determinants; Perceptual Organization; Perceptual Illusion.

On the field of psychology concerned with the nature of information obtained through the senses and the way in which we interpret such information. Information from the three-dimensional real world is received through our senses in two dimensions and processed to provide a basis for our interaction with the environment. The interpretation of this information within the brain results in three-dimensional perception. This perception of depth depends on the brain's use of a number of clues.

The world in which we live is full of variety of objects, people, and events. Look at the room you are sitting in. You will find so many things around. Just to mention a few, you may see your table, your chair, your books, your bag, your watch, pictures on the wall and many other things. Their sizes, shapes, and colours are also different. If you move to other rooms of your house, you will notice several other new things (e.g., pots and pans, almirah, TV). If you go beyond your house, you will find still many more things that you generally know about (trees, animals, buildings). Such experiences are very common in our day-today life. We hardly have to make any efforts to know them. If someone asks you, "How can you say that these various things exist in your room, or house, or in the outside environment?", you will most probably answer that you see or experience them all around you. In doing so, you are trying to tell the person that the knowledge about various objects becomes possible with the help of our sense organs (e.g., eyes, ears). These organs collect information not only from the external world, but also from our own body. The information collected by our sense organs forms the basis of all our knowledge. The sense organs register several kinds of information about various objects. However, in order to be registered, the objects and their qualities (e.g., size, shape, colour) must be able to draw our attention. The registered information must also be sent to the brain that constructs some meaning out of them. Thus, our knowledge of the world around us depends on three basic processes, called sensation, attention, and perception. These processes are highly interrelated; hence, they are often considered as different elements of the same process, called cognition.

NATURE AND VARIETIES OF STIMULUS

The external environment that surrounds us contains a wide variety of stimuli. Some of them can be seen (e.g., a house), while some can be heard only (e.g., music). There are several others that we can smell (e.g., fragrance of a flower) or taste (e.g., sweets). There are still others that we can experience by touching (e.g., softness of a cloth). All these stimuli provide us with various kinds of information. We have very specialized sense organs to deal with these different stimuli. As human beings we are bestowed with a set of seven sense organs.

These sense organs are also known as sensory receptors or information gathering systems, because they receive or gather information from a variety of sources. Five of these sense organs collect information from the external world. These are eyes, ears, nose, tongue, and skin. While our eyes are primarily responsible for vision, ears for hearing, nose for smell, and tongue for taste, skin is responsible for the experiences of touch, warmth, cold, and pain. Specialized receptors of warmth, cold, and pain are found inside our skin. Besides these five external sense organs, we have also got two deep senses. They are called kinesthetic and

vestibular systems. They provide us with important information about our body position and movement of body parts related to each other. With these seven sense organs, we register ten different variety of stimuli. For example, you may notice whether a light is bright or dim, whether it is yellow, red or green, and so on. With sound you may notice whether it is loud or faint, whether it is melodious or distracting, and so on. These different qualities of stimuli are also registered by our sense organs.

Sense Modalities

Our sense organs provide us with first-hand information about our external or internal world. The initial experience of a stimulus or an object registered by a particular sense organ is called sensation. It is a process through which we detect and encode a variety of physical stimuli. Sensation also refers to immediate basic experiences of stimulus attributes, such as "hard", "warm", "loud", and "blue", which result from appropriate stimulation of a sensory organ. Different sense organs deal with different forms of stimuli and serve different purposes. Each sense organ is highly specialized for dealing with a particular kind of information. Hence, each one of them is known as a sense modality.

Visual Sensation

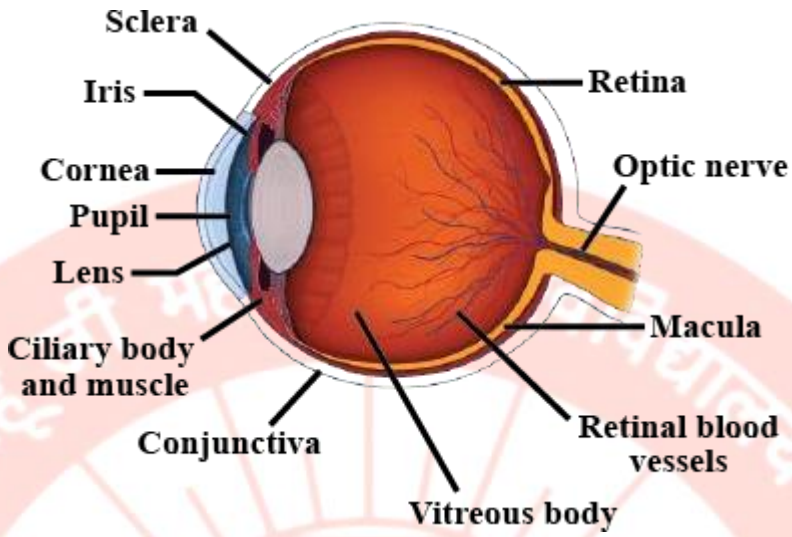
Among all sense modalities, vision is the most highly developed in human beings. Various estimates indicate that we use it in approximately 80 per cent of our transactions with the external world. Audition and other senses also contribute significantly to information gathering from the external world.

Visual sensation starts when light enters the eyes and stimulates our visual receptors. Our eyes are sensitive to a spectrum of light, the wavelength of which ranges from 380 nm to 780 nm (nm refers to nanometer, which is one billionth of a meter). No sensation is registered beyond this range of light.

The Human Eye

A diagram of the human eye is shown in a given Figure, As you can see, our eye is made up of three layers. In the outer layer, there is a transparent cornea and a tough sclera that surrounds the rest of the eye. It protects the eye and maintains its shape. The middle layer is called choroid, which is richly supplied with blood vessels. The inner layer is known as retina. It contains the photoreceptors (rods and cones) and an elaborate network of interconnecting neurons. The eye is generally compared with a camera. For example, the eye and camera have a lens. The lens divides the eye into two unequal chambers, namely aqueous chamber and vitreous chamber. The aqueous chamber is located between the cornea and the lens. It is smaller in size and is filled with a waterlike substance, called aqueous humor. The vitreous chamber is located between the lens and the retina. It is filled with a jelly like protein, called vitreous humor. These fluids help in holding the lens at its appropriate place and in proper shape. They also allow enough flexibility for the occurrence of accommodation — a process through which the lens changes its shape in order to focus the objects at varying distances. This process is regulated by ciliary muscles, which are attached to the lens. These muscles flatten the lens to focus the distant objects and thicken it to focus the near objects. Like a camera, the eye also has a mechanism to control the amount of light entering into it. The iris serves this purpose. It is a disc-like coloured membrane lying between the cornea and the lens. It controls the amount of light entering the eye by regulating pupil dilation. In dim light the pupil dilates;

in bright light it contracts. Retina is the inner most layer of an eye. It is made up of five types of photosensitive cells among which rods and cones are most important. Rods are the receptors for scotopic vision (night vision).



THE STRUCTURE OF HUMAN EYE

They operate at low intensities of light, and lead to achromatic (colorless) vision. Cones are the receptors for photopic (day light) vision. They operate at high levels of illumination, and lead to chromatic (colour) vision. Each eye contains about 100 million rods and about 7 million cones. The cones are highly concentrated in the central region of the retina surrounding the fovea, which is a small circular region of the size of a pea. It is also known as the yellow spot. It is the region of maximum visual acuity. Besides photoreceptors, retina also contains a bundle of axons of a cell (called ganglion cell) that forms the optic nerve, which leads to the brain.

Functions of Eye

Passing through conjunctiva, cornea, and pupil, the light enters the lens, which focuses it on to the retina. Retina is divided into two parts: the nasal half and the temporal half. The inner half portion of the eye (towards the nose), taking the center of fovea as mid-point, is called the nasal half. The outer half portion of the eye (towards the temple) from the center of fovea is called the temporal half. Light from the right visual field stimulates the left half of each eye (i.e. the nasal half of the right eye and the temporal half of the left eye), and light from the left visual field stimulates the right half of each eye (i.e. the nasal half of the left eye and the temporal half of the right eye). An inverted image of the object is formed on the retina. The neural impulse is transmitted to the visual cortex through the optic nerve where the image is re-inverted and processed. The optic nerve leaves the retina from the area that has no photoreceptors. In this area visual sensitivity is completely absent. Therefore, it is called the blind spot.

Adaptation

The human eye can function at a very large range of light intensities. Sometimes we have to

undergo a rapid change in illumination levels. For example, when we go to a matinee show movie, we find it difficult to see things in the hall on entering into it. However, after spending about 15 to 20 minutes there, we are able to see everything. After the show when we go out into the open, we find the light outside the hall too bright to see things, or sometimes even to keep our eyes open. However, within a minute or so we feel comfortable, and are able to see things properly. This adjustment is faster than the one made on entering the hall. The process of getting adjusted to different intensities of light is called 'visual adaptation'. **Light adaptation** refers to the process of adjusting to bright light after exposure to dim light. This process takes nearly a minute or two. On the other hand, **dark adaptation** refers to the process of adjusting to a dimly illuminated environment after exposure to bright light. This may take half an hour or even longer depending on the previous level of exposure of the eye to light.

Photochemical Basis of Light and Dark Adaptation :

You may wonder why the light and dark adaptations take place. According to the classical view, light and dark adaptations occur due to certain photochemical processes. The rods have a photo-sensitive chemical substance, called rhodopsin or visual purple. By the action of light the molecules of this chemical substance get bleached or broken down. Under such conditions the light adaptation takes place in the eyes. On the other hand, the dark adaptation is achieved by the removal of light, and thereby allowing for restorative processes to regenerate the pigment in the rods with the help of vitamin A. The regeneration of rhodopsin in rods is a time-consuming process. That is why dark adaptation is a slower process than light adaptation. It has been found that people who suffer from vitamin A deficiency do not achieve dark adaptation at all, and find it really difficult to move in the dark. This condition is generally known as night blindness. A parallel chemical believed to be found in cones is known as iodopsin.

Colour Vision

In our interaction with the environment, we not only experience a variety of objects, but also their colours. It may be noted that colour is a psychological property of our sensory experience. It is created when our brain interprets the information received from the external world. It may be remembered that light is described physically in terms of wavelength, not in terms of colour. As we have read earlier, the visible spectrum is a range of energy (380-780 nm) that our photoreceptors can detect. The energy lower or higher than the visible spectrum is harmful to the eyes. The sun light is a perfect mixture of seven colours just like a rainbow. The colours observed are violet, indigo, blue, green, yellow, orange and red is abbreviated as VIBGYOR.

The Dimensions of Colour

A person with normal colour vision can distinguish more than seven million different shades of colour. Our experiences of colour can be described in terms of three basic dimensions, called hue, saturation, and brightness. Hue is a property of chromatic colours. In simple words, it refers to the name of the colour, e.g., red, blue, and green. Hue varies with wavelength, and each colour is identified with a specific wavelength. For example, blue has a wavelength of about 465 nm, and green of about 500 nm. Achromatic colours like black, white or grey are not characterized by hues. Saturation is a psychological attribute that refers to the relative amount of hue of a surface or object. The light of single wavelength (monochromatic) appears

to be highly saturated. As we mix different wavelengths, the saturation decreases. The colour grey is completely unsaturated. Brightness is the perceived intensity of light. It varies across both chromatic and achromatic colours. White and black represent the top and bottom of the brightness dimension. White has the highest degree of brightness, whereas black has the lowest degree.

Colour Mixtures

There is an interesting relationship among colours. They form complementary pairs. When mixed in correct proportions the complementary colours yield an achromatic grey or white. Examples of complementary colours are red-green and yellow-blue. Red, green and blue are called primary colours, because on mixing, the light of these three colours can produce almost any colour. The most common example is the television screen. It contains spots of blue, red and green colours. The combinations of these three-produce different colours and shades that we see on the TV screen.

After Images

This is quite an interesting phenomenon related to visual sensations. The effect of a visual stimulus persists for some time even after the removal of that stimulus from the visual field. This effect is called after image. After images are positive and negative. Positive after images resemble the original stimulus in terms of hue, saturation, and brightness. They usually occur after a brief intense stimulation of dark adapted eyes. On the other hand, negative after images appear in complementary colours. These images appear when a person stares at the patch of a particular colour for at least 30 seconds, and then transfers the gaze to a neutral background (e.g., a white or grey surface). If the person looks at the blue colour, the negative after image will appear in Yellow.

Blind Spot

At one spot of the retina where the nerves of the eye converge to form the optic nerve is called blind spot. Blind spot has no visual acuity. These optic nerves connect the eyes to the brain from the back wall of the eyeball. People compensate the effects of blind spot by moving their head or making use of the other eye unknowingly. You must have now understood, how sensation of vision takes place with visual acuity in our daily life.

Auditory Sensation

Audition or hearing is also an important sense modality that carries great value for us. It provides us with reliable spatial information. Besides orienting us to certain objects or individuals, it plays a vital role in spoken communication also. Auditory sensation begins when sound enters our ear and stimulates the chief organs of hearing.

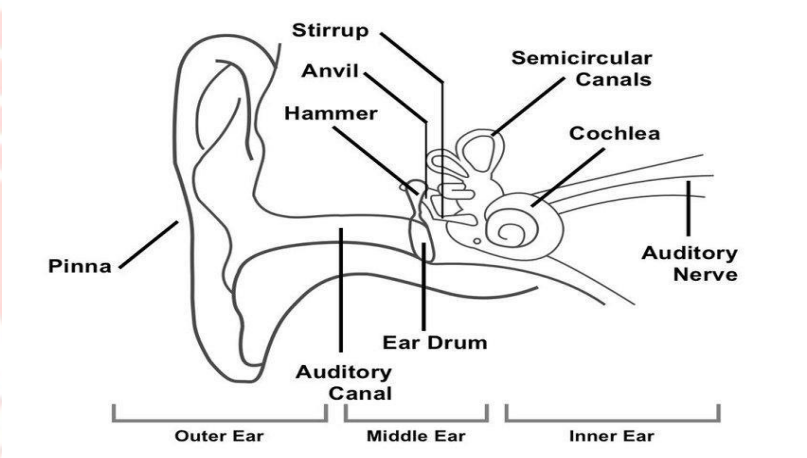
The Human Ear

Ear is the primary receptor of auditory stimuli. While its well-known function is hearing, it also helps us in maintaining our body balance. The structure of an ear is divided into three segments, called the external ear, the middle ear, and the inner ear.

1. **External Ear:** It contains two main structures, namely pinna and auditory meatus. Pinna is a cartilaginous funnel-shaped structure that collects sound waves from the surroundings. Auditory meatus is a canal protected by hair and wax that carries sound waves from pinna to the tympanum or ear drum.
2. **Middle Ear :** The middle ear starts with tympanum, a thin membrane highly sensitive to sound vibrations. This is followed by the tympanic cavity. It is connected to the pharynx with the help of Eustachian tube, which maintains the air pressure in tympanic cavity. From the cavity the vibrations pass to three ossicles known as malleus (hammer), incus (anvil), and stapes (stirrup). They increase the intensity of sound vibrations about 10 times, and send them to the inner ear.
3. **Inner Ear :** The inner ear has a complicated structure known as membranous labyrinth, which is encapsulated in a bony shell called bony labyrinth. A lymph-like fluid is found in the space between bony labyrinth and membranous labyrinth. This is called perilymph.

The bony labyrinth has three semicircular canals at right angle to each other, a cavity, called vestibule, and a coiled structure, called cochlea. The semicircular canals have fine hair cells, which are highly sensitive to postural changes as well as changes in the body orientation.

Inside the bony cochlea, there is a membranous cochlea, which is also known as scala media. It is filled with endolymph, and has a spirally coiled membrane, called basilar membrane. It has got fine hair cells arranged in a series to form the organ of corti. This is the main organ for hearing.



THE STRUCTURE OF HUMAN EAR

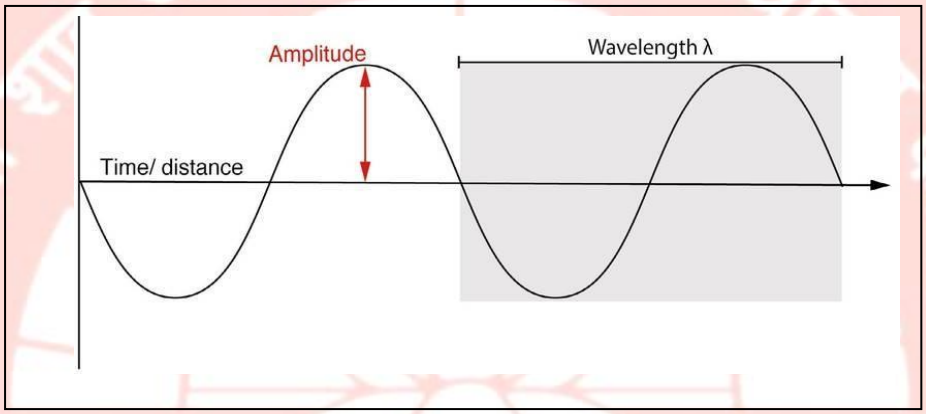
Function of the Ear:

Pinna collects the sound vibrations and serves them to the tympanum through the auditory meatus. From the tympanic cavity the vibrations are transferred to the three ossicles, which increase their strength and transmit them to the inner ear. In the inner ear the cochlea receives the sound waves. Through vibrations the endolymph is set in motion, which also vibrates the organ of corti. Finally, the impulses are sent to the auditory nerve, which emerges at the base of cochlea and reaches the auditory cortex where the impulse is interpreted.

Process of Sound

We all know that sound is the stimulus for ears. It results from pressure variations in the external environment. Any physical movement disturbs the surrounding medium (i.e. air), and pushes the air molecules back and forth. This results in changes in pressure that spread outward in the form of sound waves, travelling at a rate of about 1,100 ft/sec. These changes travel in waves much like the ripples set up by a stone thrown into a pond. When these sound waves strike our ears, they initiate a set of mechanical pressure changes that ultimately trigger the auditory receptors.

The simplest kind of sound wave is one that causes successive pressure changes over time in the form of a single repeating sine wave (Fig). Sound waves vary in amplitude as well as in wavelength. Amplitude is a general measure of stimulus magnitude. It is the amount of change in pressure, i.e. the extent of displacement of the molecules from the position of rest. the amplitude of sound wave is represented as the distance of the crest or trough from its mean position. Wavelength is the distance between the two crests. Sound waves are basically



WAVELENGTH & AMPLITUDE OF A WAVE

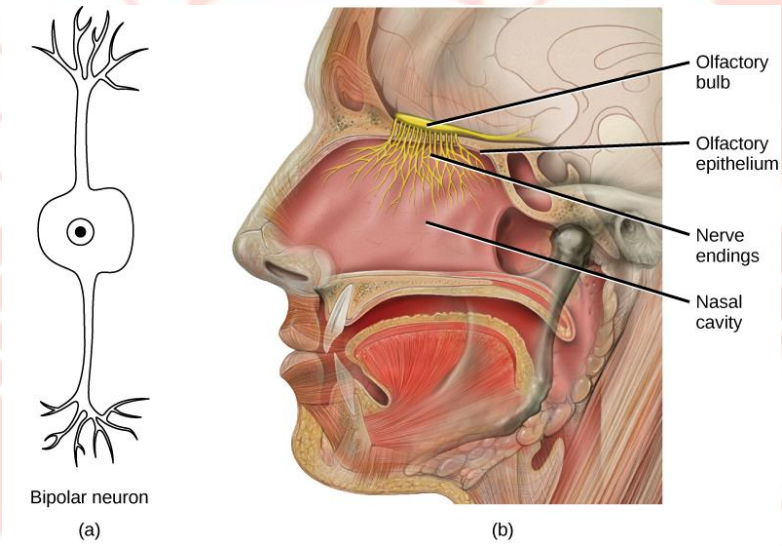
formed due to alternate compression and decompression (rarefaction) of air molecules. A complete change in pressure from compression to rarefaction and again to compression makes a cycle of the wave. Sound waves are described in terms of their frequency, which is measured in terms of cycles per second. Its unit is called Hertz (Hz). Frequency and wavelength have an inverse relationship. When the wavelength increases, the frequency decreases, and when the wavelength decreases, the frequency increases. Amplitude and frequency both are physical dimensions. Besides these, there are three psychological dimensions of sound, namely loudness, pitch and timbre.

Loudness of the sound is determined by its amplitude. Sound waves with large amplitude are perceived as loud; those with small amplitude are perceived as soft. Loudness is measured in decibels (db). Pitch refers to highness or lowness of a sound. The seven notes used in Indian classical music represent a gradual increase in their pitch. Frequency determines the pitch of a sound wave. The higher the frequency, the higher will be the pitch. The range of hearing is generally 20 Hz-20,000 Hz. Timbre refers to the nature or quality of a sound. For example, the sound of a car engine and a person talking differ with respect to quality or timbre. The timbre of a sound reflects the complexity of its sound waves. Most of the sounds found in natural environments are complex.

Smell

The five senses vision, hearing, smell, taste and skin senses tell us about the objects and events

close to our body. Vision, hearing and smell are receptive systems that enlarge our world by responding to a stimuli at a distance. Of these, smell in many ways is most primitive. The sense of smell, you get, from stimulation of receptor cells present in the nose. Smell provides information about chemicals suspended in air which excite receptors located at the top of our nasal cavity. Humans have only about 50 million olfactory receptors whereas, dogs possess more than 200 million such receptors. Dogs are more sensitive to smell therefore, they are put in dogsquad to detect crime and criminals in police department. Further, sensitivity of our olfactory receptors is limited in terms of stimuli range. Carlson (1998) stated that human olfactory receptors can detect only substances with molecular weights – the sum of the atomic weight of all atoms in an odorous molecule is between 15 and 300. This is the reason that you can smell alcohol contained in a mixed drink, with a molecular weight of 46, but cannot smell one table spoon sugar, with a molecular weight of 342. The sensation of smell in humans, in many ways, is the most primitive as compared to other senses. But in other species, olfaction is more effective. Certain animals secrete special chemical substances called pheromones which trigger particular reactions in other members of their own kind. In some cases, olfaction works as primitive form of communications. Individual differences are available in humans in smell sensation due to different reactions of olfactory receptors in them and the placement of stimuli.



As we breathe in air through our nostrils, we inhale airborne chemical molecules, which are detected by the *10 million to 20 million receptor cells* embedded in the **olfactory membrane** *of the upper nasal passage*. The **olfactory receptor cells** are *topped with tentacle-like protrusions that contain receptor proteins*. When an odour receptor is stimulated, the membrane sends neural messages up the olfactory nerve to the brain (see Figure "Smell Receptors").

We have approximately 1,000 types of *odour receptor cells* (Bensafi et al., 2004), and it is estimated that we can detect 10,000 different odours (Malnic, Hirono, Sato, & Buck, 1999). The receptors come in many different shapes and respond selectively to different smells.

Taste

Sensation of taste is related to smell as well. Tastes primarily depend upon the taste buds scattered across the upper surface and side of tongue. Each taste bud contains several receptor

cells. Humans possess about 10,000 taste buds. In contrast, chickens have only 24 and the maximum number of taste buds is in catfish, the number being 175,000, distributed all over the body. You may be thinking, based on your experience, that you can distinguish a large number of flavors in food. It is not true. You have only four basic tastes – sweet, salty, sour and bitter. But why do you have such an opinion that you can distinguish many more tastes than these four? The reason is that while eating you are not aware of only taste of the food but of its smell, its texture, its temperature, the pressure it exerts on your tongue and mouth, and many more sensations. But the basic sensation of taste depends on taste buds. Normally, sensitivity to salt is highest on the tip and sides of the tongue. Sour is detected on the sides of the tongue and bitter on the back of the tongue. This view is based on widely held hypothesis that each of these primary taste qualities is associated with different kinds of taste receptors. Further, question about the stimuli that produce these four basic taste qualities, the answer is not definite. Sweet is produced by various sugars, but also by saccharin, a chemical compound that is structurally very different from sugar. Just what these substances have in common which activate the same taste receptors is still not known. The number of taste buds on the tongue decreases with age. As a result, older people are comparatively less sensitive to taste than children are.

Skin Senses

Consider the following example- Keep three buckets of water – one cold, another warm and third lukewarm. Now put one hand in cold water bucket and another hand in warm water bucket. You will feel that warmth or cold comes only on the portion where the hands meet both water and air. Take out your both hands and put in the third bucket filled with lukewarm water. You will feel cold in the hand that was in warm water and warm to the hand that was in cold water. The sensation in hand depends on the temperature to which the skin was previously adapted. Stimulation of the skin informs the organism of what is directly adjacent to its own body. Skin senses are, in fact, a combination of at least four different sensations: pressure, warmth, cold and pain. These sensory qualities are so very different that lead to the belief that they are produced by various underlying receptor systems. Skin sensitivity is acute in those parts of the body that are most relevant to exploring the world that surrounds us directly: the hands, the fingers, the lips, the tongue. Different spots on the skin are not uniformly sensitive to the stimuli which produce different sensations. Now have another experience of skin sensation on yourself. Get yourself blind folded. Now with the tip of a ball pen, probe an area of your skin lightly, you will feel pressure at certain points where the pen contacts your skin, but not at every point. You do the same process one by one with a cold wire, warm wire and a pin. With cold wire you will feel cold at various specific points, with warm wire, you will feel warmth at various points and the point of pin will produce spots of pain. Such a sensation takes place as different points on the skin are serviced by receptors that are sensitive to different kinds of stimuli. The experience you have when you are touched lightly with a pointed object is called pressure or touch. Some parts of the body are more sensitive to pressure or touch. The lips, the fingers, the hands and the tip of the tongue are most sensitive areas. The arms, legs, and body trunk are less sensitive. This way, different account of touch or pressure is required to produce such an experience which varies for different parts of the body. Less is known about the underlying receptor systems for temperature and pain. Skin also contains receptors for heat and cold. These temperature receptors are more concentrated on the trunk of the body with hands and feet with standing greater temperature extremes. Cold receptors Sensation and Perception44 are about six times more than the heat receptors. Sensation of pain has been the subject of much controversy. Some investigators believe that these are specialized pain receptors which are activated by tissue injury and produce an unpleasant sensation. Others believe that pain is the outcome of the over estimation of any skin receptor. Pain seems to be

received by a variety of nerve endings not only in skin but in other sense organs. Extreme stimulation of any sense organ may cause pain like very bright light, loud noise, high or low temperature.

The skin is important not only in providing information about touch and temperature, but also in **proprioception** — *the ability to sense the position and movement of our body parts*. Proprioception is accomplished by specialized neurons located in the skin, joints, bones, ears, and tendons, which send messages about the compression and the contraction of muscles throughout the body. Without this feedback from our bones and muscles, we would be unable to play sports, walk, or even stand upright.

ATTENTIONAL PROCESSES

Attention also refers to several other properties like alertness, concentration, and search. Alertness refers to an individual's readiness to deal with stimuli that appear before her/him. While participating in a race in your school, you might have seen the participants on the starting line in an alert state waiting for the whistle to blow in order to run. Concentration refers to focusing of awareness on certain specific objects while excluding others for the moment. For example, in the classroom, a student concentrates on the teacher's lecture and ignores all sorts of noises coming from different corners of the school. In search an observer looks for some specified subset of objects among a set of objects. For example, when you go to fetch your younger sister and brother from the school, you just look for them among innumerable boys and girls. All these activities require some kind of effort on the part of people. Attention in this sense refers to "effort allocation".

Attention has a focus as well as a fringe. When the field of awareness is centered on a particular object or event, it is called focus or the focal point of attention. On the contrary, when the objects or events are away from the center of awareness and one is only vaguely aware of them, they are said to be at the fringe of attention.

Attention has been classified in a number of ways. A process-oriented view divides it into two types, namely selective, and sustained. We will briefly discuss the main features of these types of attention. Sometimes we can also attend to two different things at the same time. When this happens, it is called divided attention.

Selective Attention

Selective attention is concerned mainly with the selection of a limited number of stimuli or objects from a large number of stimuli. We have already indicated that our perceptual system has a limited capacity to receive and process information. This means that it can deal only with a few stimuli at a given moment of time. The question is, which of those stimuli will get selected and processed? Psychologists have identified a number of factors that determine the selection of stimuli.

Factors Affecting Selective Attention

Several factors influence selective attention. These generally relate to the characteristics of stimuli and the characteristics of individuals. They are generally classified as "external" and "internal" factors.

External factors are related to the features of stimuli. Other things held constant, the size, intensity, and motion of stimuli appear to be important determinants of attention. Large, bright,

and moving stimuli easily catch our attention. Stimuli, which are novel and moderately complex, also easily get into our focus. Studies indicate that human photographs are more likely to be attended to than the photographs of inanimate objects. Similarly, rhythmic auditory stimuli are more readily attended to than verbal narrations. Sudden and intense stimuli have a wonderful capacity to draw attention.

Internal factors lie within the individual. These may be divided into two main categories, viz. motivational factors and cognitive factors. Motivational factors relate to our biological or social needs. When we are hungry, we notice even a faint smell of food. A student taking an examination is likely to focus on a teacher's instructions more than other students. Cognitive factors include factors like interest, attitude, and preparatory set. Objects or events, which appear interesting, are readily attended by individuals. Similarly we pay quick attention to certain objects or events to which we are favorably disposed. Preparatory set generates a mental state to act in a certain way and readiness of the individual to respond to one kind of stimuli and not to others.

THEORIES OF SELECTIVE ATTENTION

A number of theories have been developed to explain the process of selective attention. We will briefly discuss three of these theories:

Filter theory
Filter-attenuation theory
Multimode theory

Sustained Attention

While selective attention is mainly concerned with the selection of stimuli, sustained attention is concerned with concentration. It refers to our ability to maintain attention on an object or event for longer durations. It is also known as "vigilance". Sometimes people have to concentrate on a particular task for many hours. Air traffic controllers and radar readers provide us with good examples of this phenomenon. They have to constantly watch and monitor signals on screens. The occurrence of signals in such situations is usually unpredictable, and errors in detecting signals may be fatal. Hence, a great deal of vigilance is required in those situations.

Factors Influencing Sustained Attention

Several factors can facilitate or inhibit an individual's performance on tasks of sustained attention. Sensory modality is one of them. Performance is found to be superior when the stimuli (called signals) are auditory than when they are visual. Clarity of stimuli is another factor. Intense and long-lasting stimuli facilitate sustained attention and result in better performance. Temporal uncertainty is a third factor. When stimuli appear at regular intervals of time, they are attended better than when they appear at irregular intervals. Spatial uncertainty is a fourth factor. Stimuli that appear at a fixed place are readily attended, whereas those that appear at random locations are difficult to attend.

Attention has several practical implications. The number of objects one can readily attend to in a single glance is used to design the number plates of motorbikes and cars so that the traffic police can easily notice them in the case of traffic rule violations. A number of children fail to perform well in school simply due to the problem of attention.

Very Short Questions/True Facts (One Sentence):

1. **Absolute Threshold**: minimum amount of stimulus energy that must be present for the

stimulus to be detected 50% of the time
2. **Bottom-Up Processing:** system in which perceptions are built from sensory input
3. inattentional blindness: failure to notice something that is completely visible because of a lack of attention
4. **Just Noticeable Difference**: difference in stimuli required to detect a difference between the stimuli
5. **Perception:** way that sensory information is interpreted and consciously experienced
6. **Sensation:** what happens when sensory information is detected by a sensory receptor
7. **Sensory Adaptation**: not perceiving stimuli that remain relatively constant over prolonged periods of time
8. **Signal Detection Theory:** change in stimulus detection as a function of current mental state
9. **Subliminal Message:** message presented below the threshold of conscious awareness
10. **Top-Down Processing:** interpretation of sensations is influenced by available knowledge, experiences, and thoughts
11. **Transduction:** conversion from sensory stimulus energy to action potential

Short Questions (100-120 words)

1. What is the difference between sensation and perception?

Sensation is receiving information through sensory organs and perception is organizing and interpretation of that information. Perceptions on the other hand, require organizing and understanding the incoming sensation information. In order for sensations to be useful, we must first add meaning to those sensations, which create our perceptions of those sensations. Sensations allow us to see a red burner, but perceptions entail the understanding and representation of the characteristic hot. Also, a sensation would be hearing a loud, shrill tone, whereas a perception would be the classification and understanding of that sounds as a fire alarm. Throughout this chapter sensations and perceptions will be discussed as separate events, whereas in reality, sensations and perceptions can be more accurately thought of as occurring along a continued where boundaries are more fluent between where a sensation ends and a perception begins.

2. What is the role of retina?

Retina is the innermost layer of the eye that includes cones and rods. These cells receive light and convert it into neural impulses to be sent to the brain via the optic nerve.

3. What is attention?

Attention is the behavioral and cognitive process of selectively concentrating on a discrete aspect of information, whether deemed subjective or objective, while ignoring other perceivable information. Psychologists consider attention as a state of consciousness whereby an individual processes particular information in the environment and converts it into details. There are different types of attention, including executive, selective, divided, and sustained attention. Attention differs from one person to the other based on duration and capacity. For instance, sustained attention is the ability of a person to concentrate on a certain aspect for an extended time. However, selective attention enables a person to focus on only what they want. Even for people with limited attention, there are various ways through which a person can improve their attention. Some of the strategies are getting enough sleep, ceasing multitasking, and practicing mindfulness.

4. Define Illusion.

An illusion is an inaccurate perception of a stimulus.

5**. Define Perceptual Constancy.**

The phenomenon in which an object or its properties (e.g., size, shape, color) appear unchanged

despite variations in the stimulus itself or in the external conditions of observation, such as object orientation or level of illumination

6**. What is retinal disparity?**

The slight difference between the right and left retinal images. When both eyes focus on an object, the different position of the eyes produces a disparity of visual angle, and a slightly different image is received by each retina. This is called retinal disparity.

7. **Define Depth Perception?**

Depth perception is the ability to gauge distance between yourself and the objects that you see. It also involves the ability to see things in three dimensions.

8. Explain any two binocular cues.

There are two main binocular cues that help us to judge distance:

Disparity – each eye sees a slightly different image because they are about 6 cm apart (on average). Your brain puts the two images it receives together into a single three-dimensional image.

Convergence – when looking at a close-up object, your eyes angle inwards towards each other (you become slightly cross-eyed). The extra effort used by the muscles on the outside of each eye gives a clue to the brain about how far away the object is.

9.What does it mean to sense something?

Sensory receptors are specialized neurons that respond to specific types of stimuli. When sensory information is detected by a sensory receptor, sensation has occurred. For example, light that enters the eye causes chemical changes in cells that line the back of the eye. These cells relay messages, in the form of action potentials (as you learned when studying biopsychology), to the central nervous system. The conversion from sensory stimulus energy to action potential is known as **transduction**.

10. What do you understand by Transduction?

Transduction represents the first step toward perception and is a translation process where different types of cells react to stimuli creating a signal processed by the central nervous system resulting in what we experience as a sensation. Sensations allow organisms to sense a face, and smell smoke when there is a fire.

Long/Extensive Questions (3 to 5 Pages)

1. Explain the structure of the eye with the help of a diagram.(Refer to page no. 31, and 32)

2. **Explain the structure of the ear with the help of a diagram .(Refer to page no. 24, and 25)**
3. **Define attention and explain the various internal and external factors that influence it. (Refer to page no. 29, and 30)**
4. **Discuss the role of vision and hearing in our lives. .(Refer to page no. 21, and 24)**
5. **Discuss the different theories of selective attention, explaining their key concepts with examples.**

Selective attention is concerned mainly with the selection of a limited number of stimuli or objects from a large number of stimuli. We have already indicated that our perceptual system has a limited capacity to receive and process information. This means that it can deal only with a few stimuli at a given moment of time. The question is, which of those stimuli will get selected and processed? Psychologists have identified a number of factors that determine the selection of stimuli. A number of theories have been developed to explain the process of selective attention. We will briefly discuss three of these theories.

Filter theory was developed by Broadbent (1956). According to this theory, many stimuli simultaneously enter our receptors creating a kind of "bottleneck" situation. Moving through the short-term memory system, they enter the selective filter, which

allows only one stimulus to pass through for higher levels of processing. Other stimuli are screened out at that moment of time. Thus, we become aware of only that stimulus, which gets access through the selective filter.

Filter-attenuation theory was developed by Triesman (1962) by modifying Broadbent's theory. This theory proposes that the stimuli not getting access to the selective filter at a given moment of time are not completely blocked. The filter only attenuates (weakens) their strength. Thus, some stimuli manage to escape through the selective filter to reach higher levels of processing. It is indicated that personally relevant stimuli (e.g., one's name in a collective dinner) can be noticed even at a very low level of sound. Such stimuli, even though fairly weak, may also generate response occasionally by slipping through the selective filter.

Multimode theory was developed by Johnston and Heinz (1978). This theory believes that attention is a flexible system that allows selection of a stimulus over others at three stages. At stage one the sensory representations (e.g., visual images) of stimuli are constructed; at stage two the semantic representations (e.g., names of objects) are constructed; and at stage three the sensory and semantic representations enter the consciousness. It is also suggested that more processing requires more mental effort. When the messages are selected on the basis of stage one processing (early selection), less mental effort is required than when the selection is based on stage three processing.

6. **Discuss the sense of Taste in detail. (Refer to page no. 27, and 28)**
7. **Explain the concept of the five senses—sight, hearing, touch, smell, and taste in brief. (Refer to page no. 21, 24, 26, 27, and 28 respectively)**
8. **Explain Functional Limitations of Sense Organs.**

Before we move on to a discussion of sense organs, it is important to note that our sense organs function with certain limitations. For example, our eyes cannot see things which are very dim or very bright. Similarly, our ears cannot hear very faint or very loud sounds. The same is true for other sense organs also. As human beings, we function within a limited range of stimulation. For being noticed by a sensory receptor, a stimulus has to be of an optimal intensity or magnitude. The relationship between stimuli and the sensations they evoke has been studied in a discipline, called psychophysics. In order to be noticed a stimulus has to carry a minimum value or weight. The minimum value of a stimulus required to activate a given sensory system is called **absolute threshold or absolute limen (AL).** For example, if you add a granule of sugar to a glass of water, you may not experience any sweetness in that water. Addition of a second granule to water may also not make it taste sweet. But if you go on adding sugar granules one after another, there will come a point when you will say that the water is now sweet. The minimum number of sugar granules required to say that the water is sweet will be the AL of sweetness. It may be noted at this point that the AL is not a fixed point; instead it varies considerably across individuals and situations depending on the people's organic conditions and their motivational states. Hence, we have to assess it on the basis of a number of trials. The number of sugar granules that may produce the experience of "sweetness" in water on 50 per cent of occasions will be called the AL of sweetness. If you add more number of sugar granules, the chances are greater that the water will be reported more often as sweet than plain. As it is not possible for us to notice all stimuli, it is also not possible to differentiate between all stimuli. In order to notice two stimuli as different from each other, there has to be some minimum difference between the value of those stimuli. The smallest difference in the value of two stimuli that is necessary to notice them as different is called difference threshold or difference limen (DL). To understand it, we may continue

with our "sugar water" experiment. As we have seen, the plain water is experienced as sweet after the addition of certain number of sugar granules. Let us remember this sweetness. The next question is: how many sugar granules will be needed in the water in order to experience its sweetness as different from the previous sweetness. Go on adding sugar granules one after another tasting the water each time. After addition of a few granules, you will notice at a point that the water is now sweeter than the previous one. The number of sugar granules added to the water to generate an experience of sweetness that is different from the previous sweetness on 50 per cent of the occasions will be called the DL of sweetness. Thus, difference threshold is the minimum amount of change in a physical stimulus that is capable of producing a sensation difference on 50 per cent of the trials. You may realize by now that understanding of sensations is not possible without understanding the AL and DL of different types of stimuli (for example, visual, auditory), but that is not enough. Sensory processes do not depend only on the stimulus characteristics. Sense organs and the neural pathways connecting them to various brain centers also play a vital role in this process. A sense organ receives the stimulus and encodes it as an electrical impulse. For being noticed this electrical impulse must reach the higher brain centers. Any structural or functional defect or damage in the receptor organ, its neural pathway, or the concerned brain area may lead to a partial or complete loss of sensation.

UNIT II(b)

UNIT II(b)	Perceptual Processes: Nature and Determinants; Perceptual Organization; Perceptual Illusion.

We humans seem to attach meanings, interpretations, values and aims to our actions. What we do in the world depends on how we understand our place in it, depends on how we perceive ourselves and our social and physical environment, depends on how we perceive our circumstances. We explain behavior with terms like `reason', ` motive', `intention', `purpose', `desire' and so on. Therefore, the issue is - each one of us perceive the world around us in different ways. It is our persona) perception of that reality which shapes and directs our behavior, and some `objective' understanding of external reality.

For example, if one person on a hillside perceives that it is cold, he will reach for his sweater. On the other hand, if the person standing next to him perceives that it is warm, he will remove his sweater. These contrasting behaviors can be witnessed happening at the same time, regardless of the actual ambient temperature as measured by a thermometer. Thus, it is clear that human behavior is a function of the way in which we perceive the world around us, and how we perceive other people and-events in that world. We often find ourselves unable to understand other people's behavior. To understand each other's behavior, we need to be able to understand each other's perceptions. First of all, we need to be able to understand why we perceive things differently.

ATTENTION AND ITS COMPONENT PROCESSES

Attention is a central process and perception is not possible without attentional processes. That means attention precedes perception. Attentional processes serve various functions in the organization of our perceptions and other cognitive functions. The various functions of attention are:

1. Alerting function
2. Selective function
3. Limited capacity channel
4. Vigilance Let us examine these functions briefly

Alerting function: Carefully observe a cat poised at the mouse hole. If you look at the cat carefully in such a situation, you will observe that the ears of the cat are directed towards the mouse hole (to receive the slightest sound of movement inside the hole), eyes are converged and focused on the hole (to get visual image of the mouse as it tries to come out), the four leg muscles are in a state of high alert (to pounce at the mouse as it comes out). There is a complete physiological and mental preparedness to catch the prey. This is an example of alertness, what we call an alerting function of attention. You will notice that the cat is allocating all its available attentional resources, this demonstrates the alerting nature of attention.

Selective function: The most important function of attention is selectivity. Selectivity refers to a process by which attention is focused on stimulus or stimuli of ongoing interest and other stimuli are ignored. Selective attention acts as a filter, that allows some information in and the other (unwanted) out. The best example of selective attention is that of "tea-party effect" in selective listening (generally referred to as cocktail –party effect) You are in a tea- party organized by your friend. You will observe that in such parties people take some snacks and cup of tea and stand and chat in small groups of four to five people. You are busy chatting with your friend in such one group. When conversation was going on, you suddenly hear someone mentioning your name in one of the adjoining groups. You attention is diverted, from your

friend, to whom you were talking, to the group from where you heard your name. Your friend is still talking to you, but your attention is diverted to the other side to listen what someone there is saying about you. Apparently, you pose that you are listening to what your friend is talking but you are unable to register anything. This example demonstrates that we can selectively attend to one task at a time. The ongoing task in this case is ignored.

Limited Capacity Channel: It has been established through research that we have limited capacity to process information that is available in the outside world. That is, tasks that require attentional resources cannot be carried out simultaneously because we have limited capacity to process the incoming information. We process the task one at a time, called serial processing. For example, if you are asked to listen to music as well as read this page in your text book, you cannot carry out both the tasks simultaneously or in parallel. If you attend to music, then during this period you are not able to comprehend what you were reading and vice-versa. That means, when the task requires attentional resources (when the task is difficult) you can carry on with one task at a time called serial processing, carrying two tasks simultaneously is not possible. However, if one task is highly practised or routinized then it is possible to carry on with two tasks simultaneously. For example, when you are a practiced driver, you can drive the car as well as converse with the other person sitting by your side. This is possible because driving requires little or no attentional resources or mental effort (because of high level of practice) and you can pay attention to what the other person is talking. This condition is called automaticity in information processing.
In this sense we are serial processors. That means, two or more tasks that require complex cognitive processing cannot be carried out simultaneously. The bottle-neck is at the central level (in the brain). That is, the brain is not able to handle two or more tasks simultaneously. In this case, computer is better then human beings, in that it can process information in parallel.

Vigilance Function: Maintaining attention on a task continuously, for some time, like looking at the radar screen, is called vigilance or sustained attention. It has been found that attending to a task for long is taxing, particularly if the task is monotonous and it leads to decrease in performance. You will be able to understand vigilance better by doing the following activity.

PERCEPTUAL PROCESS

Goldstein (2002) model of perceptual process helps us in understanding of the sequence of steps that begins with the environment and leads to our perception and an action in response to the stimulus. This process is a continual process, but when we perceive something, we do not tend to pay great deal of time thinking about the actual process at that very given moment. In order to fully understand how the perception process works, let's start by breaking down each step.
Step 1- Environment stimuli are all those things in our environment that carry the ability to be interpreted. It includes everything which can be touched, seen, tasted or heard and even those objects in the environment that can be changed with position to our body. For example you have gone for jogging in the park, what all you see there are your environmental stimuli, the people you notice talking to each other, children playing, cars passing by and even tree branches swinging by breeze all these serve as the starting point of our perceptual process.

Step 2- Attended stimulus refers to particular sensory aspects catching our attention. The attended stimulus can be any familiar stimuli and in certain instances we tend to pay attention to stimuli that appears novel to us in some way. Example for stimuli that are familiar would be face of a known person in a crowd and novelty would be a pant less man starting near the bus

stop. From our earlier example referred in the first step, what might be the attended stimuli there? During your morning jog if you notice birds chirping on the trees, the birds represent your attended stimuli. Therefore, the bird becomes the center stage on which we are focusing our attention and all other things are left aside.

Step 3 – Stimulus on the receptors is when we pay **attention** to a particular object by directly looking at it, the retina forms an image of the same. For example, while jogging your attended stimulus was bird as your focus of attention was on it. Retina of the eye forms a quick image of the object. The image of the object is formed by series of processes where the light passes through cornea regulated by iris to control the amount of light by controlling the size of the pupil after which cornea and lens interact to present an inverted image on the retina. This inverted image is still not perceived as it does not conform to the actual image attended to in the surroundings, thus leading to the next step of transduction.

Step 4- Transduction is the process in which the inverted image formed by the retina is converted into electrical signals for the brain to receive and give meaning to it. The process encompasses transformation of physical energy into electrical energy. For instance, while driving the pressure on the horn used to indicate presence of car, transduces physical energy into electrical energy. So, how you are able to interpret the image on the retina? The answer is the receptors in the eyes called rods and cones that contain a molecule named retinal which is works for transducing the light into visual signals that are then transmitted via nerve impulses.

Step 5- Processing is the next step of perceptual process, where neural processing of the electrical data is done. The path a particular signal takes denotes the nature and type of signal i.e., is it a tactile signal or visual signal. Through the neural network, electrical signals are transferred from sensory receptors to the brain. Carrying on the initial example where the image of the bird entered as light on the retina, transduced into electrical energy subject to neural processing by cells of nervous system called neurons.

Step 6- Perception is the next step where variety of stimuli are perceived in the environment. At this stage we become consciously aware of the stimulus. It occurs when neural processing of electrical signals is further processed and transducer. After this, the stimuli are actually termed as perceived. Therefore, the bird is perceived when the transduction of electrical energy by neurons is done and conscious sensory experience happens. Hence we are aware of stimuli from our environment, and in fact become completely acknowledge our perception. In the following stage of the perceptual process, perceived information is arranged into meaningful categories.

Step 7- Recognition is the ability to attach meaning and infer about the object. Our brain plays an important role in categorizing and interpreting what all it is seeing. Thus recognition is unique potential to classify an object in a category. Continuing our illustration, it is at the recognition stage of the perceptual process that we become conscious that there is bird on the tree. The stage plays a crucial role in the entire process as it involves giving meaning, classifies and deals with the objects and events in our surroundings.

Step 8- Action is the concluding stage of the perceptual process. It is the behavioral expression of the entire cognitive activity. Perception entails an overt motor response to the varied stimuli around us such as looking at the flying movement of the bird or hear the car horn outside the park. This stage involves action to transduced, perceived and recognized stimuli. It may also involve some involuntary reflexive responses such as sneeze, eye blink etc.

PERCEPTUAL SELECTIVITY AND PERCEPTUAL ORGANISATION

We process and interpret the incoming raw data in the light of our experiences, in terms of our current needs and interests, in terms of our knowledge, expectations, beliefs and motives. Perception may be defined as the dynamic psychological process responsible for attending to, organizing and interpreting sensory data. From a psychological point of view, the process of sensation, on the one hand, and perception, on the other, work together through what are termed respectively `bottom-up' and `top-down' processing. The bottom-up phase concerns the way in which we process the raw data received by our sensory apparatus. One of the key characteristics of bottom-up processing concerns the need for selectivity. We are simply not able to process all of the sensory information available to us at any given time. Bottom-up processing screens or filters out redundant and less relevant information so that we can focus on what is important.

Bottom-up processing	Top-down processing
Process of perception is direct	Process of perception is indirect
Perception is a data driven process i.e., stimuli carry sufficient information to be interpreted meaningfully and we do not need to rely on our experiences	Perception is an experience driven process i.e., stimuli does not have sufficient information to be interpreted meaningfully and therefore, we need to rely on our experiences
James J. Gibson (1966) was one of the strongest advocates of this view	Richard Gregory (1970) was the strongest advocate of this view

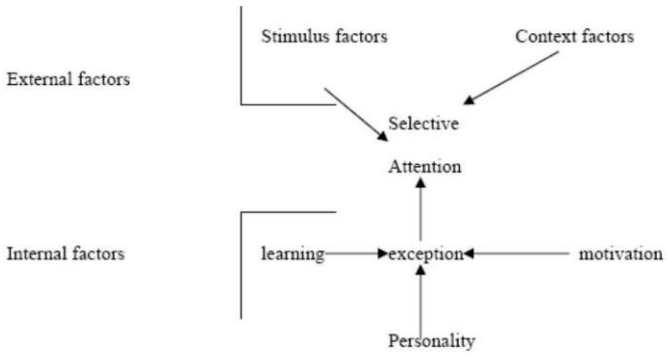
Theoretical Approaches to Perceptual Process: Pattern Recognition

On the other hand, `top-down' phase concerns the mental processing that allows us to order, interpret and make sense of the world around us. One of the key characteristics of top-down processing concerns our need to make sense of our environment and our search for meaning. This distinction between sensation (bottom-up) and perception (top-down) can be illustrated in our ability to make sense of incomplete or even incorrect sensory information.

All of us have a similar nervous system and share more or less common sensory equipment. However, we have different social and physical backgrounds which give us different values, interests and expectations and therefore different perceptions. We do not behave in, and in response to, the world `as it really is'. This idea of the `real world' is somewhat arbitrary. In fact, we have, and in response to, the world as we perceive it. We each live in our own perceptual world. Perception is a dynamic process because it involves ordering and attaching meaning to raw sensory data. Our sensory apparatus is bombarded with vast amounts of information. We are not `passive recorders' of this sensory data. We are constantly sifting and sorting this stream of information, making sense of it and interpreting it. Therefore, it can be said that perception is an information-processing activity. This information processing concerns the phenomena of selective attention (perceptual selectivity) and perceptual organisation.

Selective attention is the ability, often exercised unconsciously, to choose from the stream of sensory data to concentrate on particular elements and to ignore others. The internal and

external factors which affect selective attention are illustrated in a given Figure:



Internal and external factors which affect selective attention

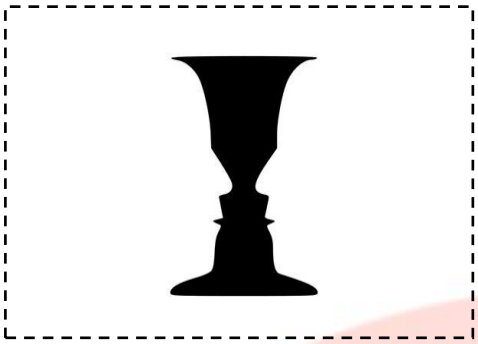
The external factors affecting selective attention concern stimulus factors and context factors. With respect to the stimulus factors, for example, our attention is drawn more readily which are described in Table below:

Rather then	
Large	**Small**
Bright	**Dull**
Loud	**Quiet**
Strong	**Weak**
Unfamiliar	**Familiar**
Moving	**Stationary**

However, it may be noted that we do not merely respond to single feature rather we respond to the pattern of stimuli available to us.

Figure-Ground Perception

In the early 20th century a group of German psychologists calling themselves Gestalt psychologists set out to discover the principles through which we interpret sensory information. Gestalt roughly translates to mean "whole" "form" or "pattern". They believed that our brains create a coherent perceptual experience that is more than simply the sum of the available sensory information and that it does so in predictable ways. One example of this is **Figure-Ground**.



Sometimes when we look at an image, there aren't enough cues to allow us to distinguish the figure from the ground; they blend into each other in a sort of camouflage. We alternate back and forth between the two images because of the ambiguity of clues.

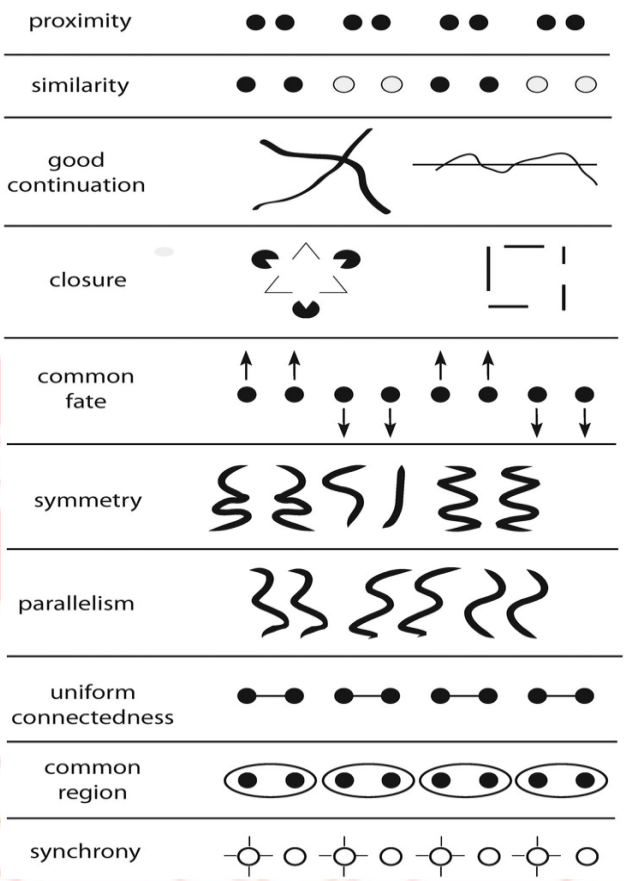
Another example of Gestalt principles is the idea of **Grouping** or the perceptual tendency to organize stimuli into coherent groups. There are four principles of perceptual organization/grouping: 1) Proximity, 2) Similarity, 3) Closure/Connectedness, and 4) Continuity, 5) Good Figure, 6) Common Region. These principles usually broaden our understanding of the world; our brain tries to fill in missing information rather than seeing things as random bits and pieces of raw data.

LAWS OF PERCEPTUAL ORGANIZATION: GESTALT PRINCIPLES

In the early 20th century, three German psychologists Max Wertheimer, and his associates Wolfgang Köhler and Kurt Koffka proposed new principles for explaining perception called as Gestalt principle. Gestalt psychology is "form psychology". According to Gestaltists, the process of perception does not involve perceiving an array of stimuli as an object but it involves our tendency to seek a form or pattern in it. The literal meaning of the word Gestalt is form or configuration. The basic premise of Gestalt psychology is that 'whole is different from the sum of its part'. This implies that organization (or structured whole, known as Gestalten) gives a different meaning to the perception. It is because of organization that we are able to perceive complex patterns as unitary forms or objects. Organization could be in the way things are grouped together. Based on this basic premise, Gestalt psychologists proposed a number of principles or laws to explain how we perceive smaller units of stimuli as a whole, having a particular pattern. These principles are known as laws of perceptual organization.

Law of Good Figure/ Law of Pragnanz/Law of Symmetry- The word Pragnanz is a German in origin, meaning "good figure". Therefore, this principle is also called as "law of good figure". According to this principle we have a tendency to organize stimuli to make the figure balanced or symmetrical. Thus, out of all possible ways of grouping stimuli, we tend to group stimuli in the simplest and stable shape. Thus, we can say that simpler forms are more perceived by us.

Law of Similarity -This principle suggests that things are grouped together according to their similarity. We tend to group circles based on its colours. In real life also, we use this principle extensively. For example, during a cricket match, we tend to group players based on the colour of their jersey.



Law of Closure -We sense so many things but it is the law of closure that completes our perception. The perceptual processes organize our perceptions of the stimulus by filling in the gaps in our sensations.

Law of Proximity- This refers to the grouping of elements or objects that occur close together. In order to perceive stimuli meaningfully, stimuli which are closer to each other are perceived by us belonging to one group. Due to this reason, people tend to see circles as cluster or group rather than individual circles;

Law of Continuation- An example of law of continuation It refers to our tendency to perceive figures in continuation rather than in parts. This principle is exhibited more in the perception of line.

Law of Common fate- This law involves movement. It states that things are organized according to their movement together in a group i.e., stimuli moving in similar directions are perceived as belonging to same group.

Perception of Distance and Depth

We are constantly judging the distance between ourselves and other objects along in a process known as **depth perception**. Depth perception can be accomplished with one eye (monocular cues) or two eyes (binocular cues). It is interesting to understand that we perceive depth and distance with the help of various cues available to us. These cues may be divided into three categories: **i. Non- Visual Cues ii. Binocular Cues iii. Monocular Cues**.

Non-visual Cues: Accommodation and Convergence are the two non-visual cues. These cues

are called 'non-visual' because they do not emanate from the retinal image, as is the case with other cues.

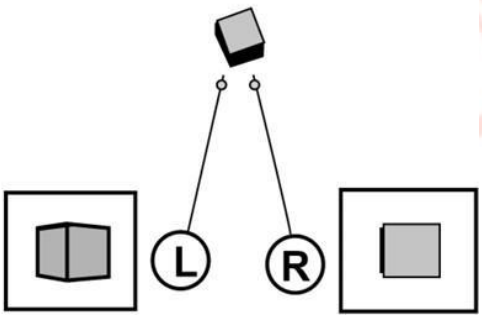
a. Accommodation: What we call focusing in camera, in the case of eye we call accommodation. The image of the external objects is focused on the retina with the help of lens in the eye. The lens is adjusted by the **Ciliary muscles** to focus far and near objects on the retina. The ciliary muscle changes the convexity of the lens so that the image of the object is clearly focused and this process is called accommodation.

If the object is relatively at a distance (more than 2 meters or so) the ciliary muscle is relaxed. When the object comes nearer and nearer the muscle contracts more and more, making the lens more convex. The degree of contraction of the ciliary muscle, signaled to the brain through **Kinesthetic impulses** is a possible cue of distance. That is, if the object is farther away from the viewer, the ciliary muscle is relaxed and when the object is nearer the ciliary muscle is tense. The extent of contraction in the ciliary muscle fed back to the brain is the cue of accommodation. However, research indicates that accommodation is a weak cue of perception of depth and distance.

b. Convergence: When you read the letters of this printed line, you converge your eyes (with the help of six **intra-ocular muscles** located outside each eye) to bring the image in both eyes to fall on the fovea of each eye for fusion and clear vision. The extent of convergence achieved is signaled to the brain and this provides a cue to distance. For example, if the object is nearer the angle of convergence will be large and as the object goes farther away the angle of convergence decreases. For objects at a far away distance the eyes are more or less parallel. The extent of convergence achieved is fed back to the brain and it is a cue to distance. Again, research indicates that like accommodation it is a weak cue of perception and distance.

Binocular Cues which again are visual cues to gauge depth and distance requiring the use of both eyes. The cues that we receive from both eyes are known as binocular cues. These cues are more powerful than monocular cues. The process of gaining binocular cues to assess depth is known as stereopsis. Two examples of these cues are:

- **Retinal Disparity:** Our eyes are set roughly 2 ½ inches apart which means that each eye has a slightly different view of things. Binocular distance cues are based on the difference between the images cast on the two retinas when both eyes are focused on the same object.



L= Left eye R=Right eye

Humans have two eyes, separated by the distance of average 6.3 cm. Therefore, the retinal image of the same object differs slightly from each other or disparate view. The closer an object

is to eyes, greater will be the difference in its retinal image. Our brain analyses the degree of disparity between these two separate retinal images and produces a single image of the object to judge information on depth, height and width.

- **Convergence:** a visual depth cue that comes from muscles controlling eye movement as the eyes turn inward to view a nearby stimulus (no convergence if far away and can't converge if too close). Our eyes make an angle while focusing on an object, known as convergence angle. Convergence angle for distant and nearby objects are different. When an object is at a distance, our eyes make smaller convergence angle, but when an object is closer to our eyes, our eyeballs rotate inwards and form large convergence angle. This change in convergence gives a clue about distance and depth to the perceiver.

Monocular Cues- Monocular Cues are also called pictorial cues because they include the kind of depth information found in the photographs and paintings. These cues are extensively used by the artists in their paintings. These cues are visual cues requiring the use of one eye. There are several monocular cues that we use to gauge distance or depth.

- **Relative Size**: This cue gives us information about the distance of an object based on its relative size with a similar object. This cue works on both two-dimensional and three-dimensional images. The basic premise is that if two objects are of the approximately similar size, then the object which is perceived as larger is closer If two objects are similar in size, we perceive the one that casts a smaller retinal image to be farther away.
- **Interposition**: monocular distance cue in which one object, by partly blocking a second object, is perceived as being closer.
- **Relative Height:** We perceive objects that are higher in our field of vision to be farther away than those that are lower.
- **Relative Motion (Motion Parallax):** Motion perspective is the term used by J.J. Gibson for the flow of visual information surrounding a moving observer. The term is used with the focus on the critical point that as one moves about in the environment, objects at a different distance move at different speeds according to their distance from, and position relative to, the observer. This results in complex movements knows as motion parallax. Monocular cue to distance in which objects closer than the point of visual focus seem to move in the direction opposite to the viewer's moving head, and objects beyond the focus point appear to move in the same direction as the viewer's head (example of being on a train)
- **Linear Perspective:** monocular cue to distance and depth based on the fact that the two parallel lines seem to come together on the horizon
- **Aerial perspective:** When you look at buildings in the city, buildings close by look clearer and their boundaries (contours) are well defined in comparison to distant ones, which look gray and hazy. The buildings, trees, and other objects that look hazy are perceived far away in comparison to those which look clear. Objects are perceived at a distance if there is a presence of haze in the environment. Haze is the result of atmospheric dust particles, fog or water vapour. Sometimes perception of distance based on haze can be deceptive. The same mountain can be perceived as nearer or at distance depending on the presence of haze
- **Familiar Size:** Because you know the height of your friend, you can judge the distance at which he is standing. This is possible because we always store the memory image of objects that we see. When we look at an object which is away from us we can interpret the distance form the retinal image by taking into account the familiar size. You can do this activity. Take a playing card and present it to your friend at a distance of 10 ft from him. Ask him to judge the distance at which the card is placed. He will be quite accurate in judging the size of the

playing card. Because he is familiar with the size of the card, which is always of the same (standard) size.

- **Texture-Density Gradient :** Look at the ploughed field, the nearer surface looks rough and as we extend our vision farther away the texture gets finer. Similarly, if you look at the grass nearby, you will be able to see the blades of grass clearly, but as you extend your vision to a distant point the ground looks as if painted green and the blades of the grass are no more visible. This texture gradient is a cue to distance. The objects lying on a surface that look fine and smooth in texture are perceived at greater distance than those objects on a rough surface.
- **Light and Shadowing**: monocular cue to distance and depth based on the fact that shadows often appear on the parts of objects that are more distant.

PERCEPTUAL CONSTANCY

We have a tendency to perceive objects as stable and unchanging despite changes in sensory stimulation which is called **Perceptual Constancy**. Once we have found a stable perception of an object, we can recognize it at almost any distance, from most any position, and under most any illumination. Without this ability, the world would be really confusing. There are a few different types of perceptual constancies that we possess. The first is **Size Constancy** or the perception of an object as the same size regardless of the distance from which it is viewed (wouldn't think that a woman 100's of feet away was only a few inches tall; experience tells us otherwise). The second type is **Shape Constancy** which is a tendency to see an object as the same shape no matter what angle it is viewed from (door remains a rectangle even though it is moved and viewed from other angles). Third is **Color Constancy** or an inclination to perceive familiar objects as retaining their color despite changes in sensory information (see our red car as red no matter if it is in bright light or in the dark). Finally we have **Brightness Constancy** which involves the perception of brightness being the same, even though the amount of light reaching the retina changes (compare objects with surrounding objects – know a white piece of paper is brighter than a piece of coal).

Very Short Questions/True Facts (One Sentence)

1. Sensation is to awareness as perception is to interpretation.
2. If object A overlaps object B we perceive object A as being closer. Which depth cue are we using? -Interposition
3. Proprioception is the ability to sense the position and movement of our body parts.
4. In depth perception, accommodation would be most useful for the activity of threading a needle.
5. Proximity is a gestalt principle.
6. People are more likely to notice a 50-cent increase in the price of a candy bar than they are to notice a 50-cent increase in the price of an iPad. This illustrates- Weber's law.
7. What is another term for difference threshold? -just noticeable difference.
8. In psychophysical trials to determine a threshold of perception, a percentage of correct performance is necessary which is 75%.
9. 75% means that in order to accurately determine the threshold, participants need to correctly perceive or discriminate stimuli at a rate of 75% or higher. This level of accuracy ensures that the results are reliable and can be used to make conclusions about the perception threshold.
10. Internal noise interferes with out perceptual decision hence thresholds are probabilistic and not absolute measures of performance (hence 75%)

Short Questions (100-120 words)

1. **Explain Perception.**
   Perception is a psychological process that enables a person to envision the facts around them. It also helps an individual to process information they sense using external stimuli ability of a person to perceive what is available in their environment enables them to understand and interact with their immediate surroundings.
2. **Explain Bottom-up processing & top-down processing.**
   Perception refers to the way sensory information is organized, interpreted, and consciously experienced. Perception involves both bottom-up and top-down processing. **Bottom-up processing** refers to the fact that perceptions are built from sensory input. On the other hand, how we interpret those sensations is influenced by our available knowledge, our experiences, and our thoughts. This is called **top-down processing**.
3. **Explain ESP (Extra- Sensory Perception)**

We have observed in the foregoing discussion on perception that sense organs provide the raw material or data on which our perceptions are organized. However, there is another type of perception in which perception is organized without the involvement of senses, called Extra-Sensory Perception (ESP). As the word denotes, extra sensory perception is perception without (physical) stimulation.
Extra sensory perception includes phenomenon like **telepathy, clairvoyance, and telekinesis.**

- **Telepathy:** It refers to transfer of thought between two persons at different places.
- **Clairvoyance:** Perceiving objects and events without the involvement of senses.
- **Telekinesis:** Controlling objects without touching them. ESP is considered a para-psychological phenomenon. Psychologists, with scientific attitude, are generally skeptical about the phenomena of ESP.

4. **Describe various determinants of perceptual organisation.**
   Factors which determine perceptual organisation are figure ground organisation, perceptual consistency and depth perception.
5. **What do you understand by the term perceptual constancy?**
   Perception of an object's shape, size or brightness remains the same even though its image on the retina has changed. This is called perceptual consistency.

6. **Identify the various determinants of attention.**
   Determinants of Attention:
   (i) Physical factors: All other things being equal, physical factors like repetition, contrast, shape, size, brightness and contrast do affect our attention. A good packaging or bright light attracts us. That is why all big companies invest a lot on packaging their products in an attractive manner. Similarly, an advertisement which is published on a regular basis in newspapers and electronic media catches the attention of customers more easily than non-advertised products.
   (ii) Motives and attention: Motives also play a role in shaping our perception. For example, if you are hungry food-related words are more likely to gain your attention than non-food words. Advertisers and propagandists take advantage of two motives that are very common in our society: anxiety and sex. Many products such as toothpastes, food products even automotives highlight the health concern to catch the attention of Customers.

7. **Discuss the concept of attention and explain its component processes. (Refer to page no. 36, and 37)**
   Attention is the process by which we notice stimuli. Selective attention is a process in which we give priority to a particular sensory message.
8. **Explain Difference Between Monocular and Binocular Cues. (Refer to page no. 43, 44, and 45)**
9. **Discuss the concept of Pattern Recognition.**
   Pattern recognition refers to the process of recognizing, identifying, and categorizing information by detecting patterns and regularities in stimuli. Humans possess two systems for recognizing patterns (Farah, 1992, 1995; Farah et al., 1998). The first system is specialized in identifying individual parts of objects and assembling them into distinctive wholes, known as the feature analysis system. For instance, when you're in a biology class observing the different components of a tulip—such as the stamen and pistil—you are using this system. The second system, referred to as the configurational system, is designed to recognize overall configurations. While it's not adept at analyzing individual parts or their construction, it excels at perceiving whole patterns. For example, when you see a tulip in a garden and appreciate its overall beauty and form, this system is at work.
10. **Discuss the difference between in Bottom up and top-down processing (Refer to page no. 39)**

Long/Extensive Questions (3 to 5 pages):

1. **Describe the importance of perception in our daily life.**

Ans: Perception in our daily life: Sensation can be explained as the process by which one form of energy is converted into another form. For example, light is converted into neural impulses by which we code sensory events in our system that can be processed by our brain. The sensory systems process information reaching to the brain. The motor systems process information going out of the brain to muscles and glands. Sometimes your parents switch on the T.V. and adjust the volume of sound that they can hear. Suppose you adjust it to a volume which you are able to detect but your mother says that she is unable to hear and asks you to increase the volume. If your mother asks you to stop after some point that means that the difference of adjustment has been noticed by your mother. This minimal amount of change of volume between two stimuli that is being recognized by your mother is called a "difference threshold". Background of a stimulus also affects our sensation. For example stars are present in the sky in day time and at night but are visible only after sunset or at nighttime because they cannot be detected due to the intense background of the daylight sun.
Sensation and perception work seamlessly together to allow us to experience the world through our eyes, ears, nose, tongue, and skin, but also to combine what we are currently learning from the environment with what we already know about it to make judgments and to choose appropriate behaviours.

2. **Define perception and also discuss principles of perceptual organisation? (Refer to page no. 41, and 42)**
3. **Discuss the concept of depth perception and perceptual constancy?**

Depth Perception-It is the ability to see three-dimensional space and to accurately judge distances. Without depth perception you can't ride on a motorcycle, or drive a car, catch

a ball, thread a needle or simply walk around a room. The world would look like a flat surface. The ability of depth perception is partly innate and partly learned.

Depth cues are features of environment and messages from the body that supply information about distance and space. The cues which work with just one eye are called monocular cues and those which require two eyes are called binocular cues. Binocular cues are the most basic source of depth perception that is caused due to retina disparity (a discrepancy in the images that reach the right and left eyes). A person with one eye will have very limited depth perception. Pictorial cues for depth are features found in paintings, drawings and photographs that impart information about space, depth and distance. This influence causes apparent perception of things which are not there. For example, if you stand between two railway tracks, they appear to meet at the horizon, even though they actually remain parallel.

4. Describe the various applications of perception.

There are several ways in which knowledge of the process of sensation, perception and attention can be used in everyday life.

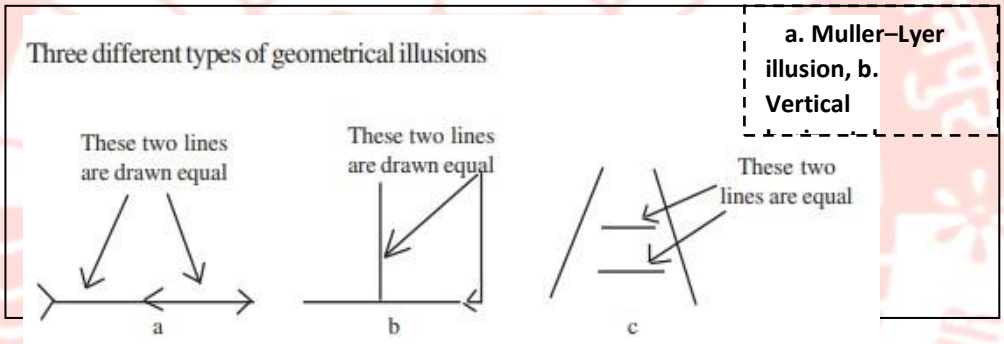
(i) Eyewitness: You may be aware that eyewitness testimony is key to decisions in the judiciary. Not only do advocates and police officers lay strong emphasis on eye witness testimony, but they have a strong belief that it is usually correct. But psychologists in large numbers are of the opinion that eyewitness errors are very common in perception. In fact, impressions formed when a person is surprised, stressed or threatened are especially prone to distortion. Therefore, it would be advisable for the investigative agencies and jurors to gather more evidence instead of solely relying on eyewitness while coming to a conclusion.

(ii) Perceptual awareness and positive psychology: Do some people perceive things more accurately than others? Humanistic psychologists believe that some people perceive themselves and others with unusual accuracy. Habituation is when we stop paying attention to familiar stimuli. When a stimulus is repeated without change our response to it habituates or decreases. It seems that creative people attend to stimuli, even those that are repeated.

(iii) The value of paying attention: We have this general tendency to generalize without paying attention to the diversity of possibilities. Perceptual clarity requires rigorous effort of paying more and more attention. Breaking perceptual habits and interrupting habituation can lead to good results. If you begin to question your own perceptions by bringing another interpretation to the same reality you can get marvellous outcomes in your activities.

5.Discuss Illusions in Brief.

Illusions are misperceptions resulting from misinterpretation of sensory information. Illusions are also known as false perceptions. For example, if there is a thick rope lying on one side in the dark, it could be perceived as a snake. Illusion is a normal phenomenon which is perceived by all human beings and animals. You must have experienced moon illusion. The moon in the horizon looks far bigger in size than moon in the zenith. We know, that the retinal image of the moon at the horizon or zenith is the same (moon being at the same distance from the earth), however, its perceived size differs a lot. One explanation takes into account the size –distance relationship. Helmholtz long back suggested that judgement of size is related to the judgement of distance. For example, retinal angle being constant, if the judged distance of an object is more than the actual physical distance then the perceived size will also be larger than the actual physical size and vice-versa. It is contended that with retinal image being the same, the perceived distance of the moon in the horizon is more than the perceived distance of the moon in the zenith. Thus, the perceived size of the moon will be larger at the horizon than the zenith. Geometrical Illusions: there are quite a few illusions that can be demonstrated by drawing some lines, these are called geometrical illusions. The most famous is Muller-lyer illusion.



a. Muller–Lyer illusion, b. Vertical

6.Explain the Factors Influencing Perception.

At any particular time, there are many competing stimuli out there which will gain our attention and result in perceptual organization. The stimulus characteristics are important, as are our own internal needs, motivations, and our specific sociocultural back ground in which we have been reared. All these factors, stimulus variables and internal factors peculiar to an individual, determine how our perceptions are organized. There are central determinants in perceptions. They are factors such as sets, attitudes, values, needs, and other similar intervening variables. Helmholtz and other Gestaltists have emphasized the significance of such determinants:

i. **Context and Set-effects**
ii. **Needs and motives**
iii. **Social and Cultural factors.**
iv. **Effect of Emotion**
v. **Effect of Stimulus Characteristics**

Context and Set-effects: A given stimulus may provide radically different perceptions because of the immediate context. The context creates an expectation in our brain (top-down

phenomenon) that influences our perception at a particular moment. For example, in noisy conditions you are verbally provided with a sentence “eel is moving”. You will perceive the word “eel” as "wheel" because of the context provided by the later part of the sentence. Similarly provide a stimulus verbally “eel the orange”. You will perceive the word “eel” as peel. This is because the later word “orange” provides an expectation for the perception of earlier word. **Perceptual sets** also influence our perceptions. Perceptual set refers to our mental expectancies and predispositions to perceive one thing and not another. Perceptual set can influence what we hear as well as what we see. Broadly speaking our educational, social, and cultural experiences shape what we perceive. In other words, our learned assumptions and beliefs help us in organizing our perceptions. For example, if we hold very strong beliefs about God, the temple is perceived as a place that gives us peace, love, solace, affection, and a satisfying experience. Similarly, stereotypes (a generalized belief about a group of people) help us to perceive persons we meet first time. Much of our social interaction is determined by the stereotypes we hold about individuals and groups.

Needs and Motives: We have seen above that immediate Context and perceptual sets affect our perceptions. Similarly, personal variables, like needs, emotions, values, personality, etc. influence our perceptions. An example will demonstrate the effect of need state on the perception of an individual. Two men, a hungry and another thirsty, go to a restaurant and the waiter hands over to each a menu for obtaining order. It was found that, at a quick glance, the hungry man could see eatable items in the menu and the thirsty drinks. This example supports the hypothesis that need states of individuals affect their perceptions. It has been found that emotions, motivation, and personality factors influence our perceptions. For instance, while studying the effect of reward and punishment on the organization of one’s perception, it was found that children perceived significantly more often rewarded aspects of the figure-ground stimuli in comparison to the punished.
Motivation always plays a vital role in various psychological processes including perception. You must have observed that when you feel hungry, the smell of the food catches your attention more easily than when you are full. Many experimental studies have also reported the same effect. In a classic experiment by Sanford (1936), it was shown that hungry participants perceived ambiguous stimuli more as food related stimuli than non-hungry participants. Similarly, in a recent study, Changizi and Hall (2001) demonstrated that the need for thirst also affects perception. Participants showed a greater tendency to perceive transparency (common property of water) in ambiguous stimuli.

Social and Cultural factors: Perceptual learning and development takes place in the context of socio-cultural environment. Our perceptions reflect the effect of past learning and, therefore, if learning and socialization takes place in a particular socio-cultural background it will be reflected in our perceptions. A large number of studies support the hypothesis that culture influences our perceptions. It has been found that the Africans living in dense forests displayed greater illusion in the Vertical – Horizontal figure and Western-Urbans in the Muller –Lyer figures. The differences have been explained due to their experiences in different culture. So, it should be clear to you that cultural background influences the individual to perceive the world differently.

Effect of Emotions: What do you think if emotions can affect your perceptual ability? McGinnies (1949) utilized list of words, eleven of which were neutral (apple, child, river, music, sleep) and seven were emotionally toned (raped, whore, penis, bitch). McGinnies found significant differences between the neutral and emotional (critical) words. The threshold was higher for emotional words, galvanic skin response was greater and there were more distortions for emotional words, which was interpreted as anxiety-avoidance response in the form of perceptual defense mechanism that protected the participants from unpleasant meanings of the critical words. Emotions do not hamper perception always. Studies have suggested that when the perceptual task is irrelevant to emotions, it hinders your performance. Whereas, when it is related to emotions it facilitates performance (Dodd, Vogt, Turkileri, &Notebaert, 2016; Compton et al., 2003).

Effect of Stimulus Characteristic: You may have noticed that the horns used by heavy trucks usually have high frequency, high pitch and high volume. Why? Just to seek your attention. Studies have shown that those stimuli which sound, taste, look or feel different, grab our attention more than other stimuli and thus affect our perception. According to the evolutionary psychologist, this property has a survival purpose. It has helped humans in identifying danger. Prior experience plays an important role in the way we interpret stimuli; it shapes your perception. For example, if you mistakenly perceive a rope as a snake in the dark, then your previous experience is guiding your perceptual process.

7. Discuss the Size Perception in detail.

Our ability to judge the size of the stimuli correctly even with the change in the distance has been explained using three hypotheses: the size-distance invariance hypothesis, familiar size hypothesis and the direct perception hypothesis.

1) **Size-distance invariance hypothesis (SDIH):** The basic premise of this hypothesis is that the perceived size of a stimulus is proportional to perceived distance (Kilpatrick and Ittelson, 1953). It further states that if information about the distance is available then size of the stimuli is interpreted based on retinal image. However, if the information about the distance is not available then size of the stimuli is judged based on the visual angle alone. The mathematical expression of this relationship is as follows:

$$S`/D` = f(\theta)$$

Where, S` = perceived size

D` = perceived distance

θ = visual angle

Here, before proceeding further, it is important to explain the term “visual angle”. It is the angle made by our eyes after looking at the object.

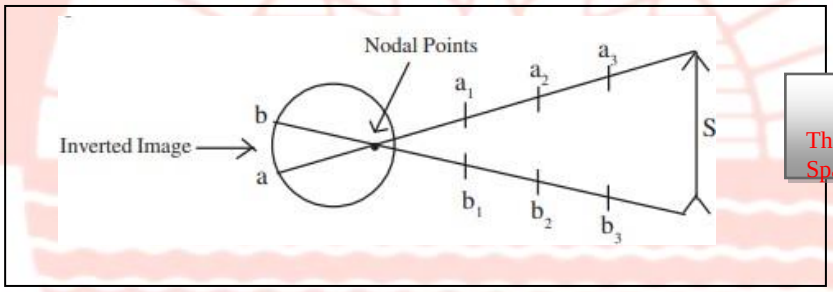
2) **Familiar Size Theory/Cue:** This cue is used to judge not only size but also the distance and depth of the stimuli. We know the visual angle for a stimulus decreases with the decrease in the distance. Our brain uses this information (visual angle) along with our previous information of the size of the targeted stimulus and determines its actual size, distance and depth. Thus, according to this theory familiar size influences our size perception, which in turn influences our distance perception (Ittelson, 1960). However, later psychologists Gogel & Da Silva (1987) proposed that the theory of familiar size is valid in all conditions. When the

condition of viewing is improvised then we use egocentric reference distance to determine the size of the familiar object.

3) Theory of Direct Perception: Gibson in 1979 proposed the theory of direct perception. His ideas regarding size perception were summarized by Epstein (1982) (pg.78) as: "(i) there is no perceptual representation of size correlated with the retinal size of the object, (ii) perceived size and perceived distance are independent functions of information in stimulation, and (iii) perceived size and perceived distance are not causally linked, nor is the perception of size mediated by operations combining information about retinal size and perceived distance. The correlation between perceived size and perceived distance is attributed to the correlation between the specific variables of stimulation which governs these precepts in the particular situations".

8. Explain the perception of space.

Perception of space also refers to the perception of size and distance. The problem emerges from the fact that the image of the three-dimensional world is projected on the two-dimensional retina. This raises the question: From the two-dimensional image, how do we perceive the three-dimensional world? Or in other words how do we perceive depth and distance? The problem of space perception is depicted in Figure.



The problem of Space perception

The problem of Space perception It can be observed from Figure that the points a1, a2, a3 , ……on the line of sight fall on the retina at "a". Similarly, those of points b1, b2, b3 ,… fall on "b" on the retina. (The image of the external objects on retina is inverted). The available information on the retina can only indicate the direction of these points in space, but not in any obvious manner about distance from the eye. That is, the location of a 1, a2, and a3 or b1, b2 and b3 .

However, in our day-to-day experience we know that our perceptions about the depth and distance are quite accurate. If our judgment about the depth and distance were not accurate, we would be colliding with the objects in the external world. We cannot drive bicycle or scooter if our judgments of depth and distance are inaccurate. The problem is that how do we accurately perceive space (depth and distance) from two-dimensional image on the retina. You will find shortly that the perception of space is possible because of the various cues available to us.

9. Discuss the Perception of depth and distance. (Refer to page no. 42, 43, and 44)

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UNIT III

UNIT III	Learning: Classical Conditioning, Operant Conditioning and Verbal Learning: Methods and Procedures.

Learning is defined as "any relatively permanent change in behavior that occurs as a result of practice and experience". Learning is a continuous and ongoing process throughout our lives. Learning shapes are thinking believes attitude language development and lifestyle. The quality of earning depends on the exposure to the physical, social and cultural environment.

The process of learning has certain distinctive characteristics. The first feature is that learning always involves some kinds of experience. We experience an event occurring in a certain sequence on a number of occasions. If an event happens then it may be followed by certain other events. For example, one learns that if the bell rings in the hostel after sunset, then dinner is ready to be served. Repeated experience of satisfaction after doing something in a specified manner leads to the formation of habit. Sometimes a single experience can lead to learning. A child strikes a matchstick on the side of a matchbox, and gets her/his fingers burnt. Such an experience makes the child learn to be careful in handling the matchbox in future. Behavioral changes that occur due to learning are relatively permanent. They must be distinguished from the behavioral changes that are neither permanent nor learned. For example, changes in behavior often occur due to the effects of fatigue, habituation, and drugs. Suppose you are reading your textbook of psychology for sometime or you are trying to learn how to drive a motor car, a time comes when you will feel tired. You stop reading or driving. This is a behavioral change due to fatigue, and is temporary. It is not considered learning.

Learning involves a sequence of psychological events. This will become clear if we were to describe a typical learning experiment. Suppose psychologists are interested in understanding how a list of words is learned. They will go through the following sequence :
(i)do a pre-test to know how much the person knows before learning, (ii) present the list of words to be remembered for a fixed time, (iii) during this time the list of words is processed towards acquiring new knowledge, (iv) after processing is complete, new knowledge is acquired (this is LEARNING), and (v) after some time elapses, the processed information is recalled by the person. By comparing the number of words which a person now knows as compared to what s/he knew in the pre-test, one infers that learning did take place. Thus, learning is an inferred process and is different from performance. Performance is a person's observed behavior or response or action. Let us understand what is meant by the term inference. Suppose you are asked by your teacher to memorise a poem. You read that poem a number of times. Then you say that you have learned the poem. You are asked to recite the poem and you are able to recite it. The recitation of the poem by you is your performance. On the basis of your performance, the teacher infers that you have learned the poem.

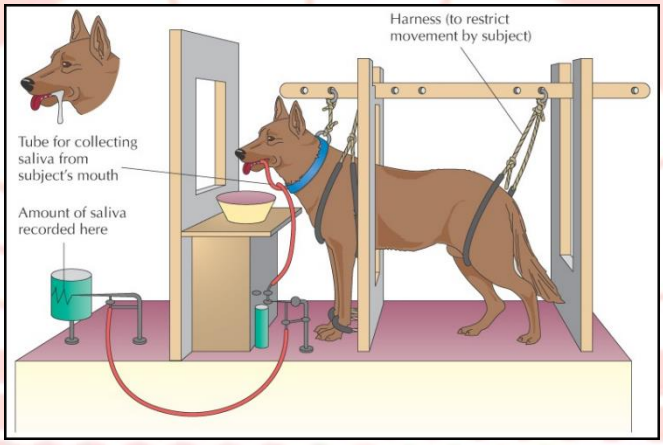
LEARNING RELATED CONCEPTS

Learning takes place in many ways. There are some methods that are used in acquisition of simple responses while other methods are used in the acquisition of complex responses. In this section you will learn about all these methods. The simplest kind of learning is called conditioning. Two types of conditioning have been identified. The first one is called **classical conditioning, and the second instrumental/operant conditioning**. In addition, we have

observational learning, cognitive learning, verbal learning, concept learning, and skill learning.

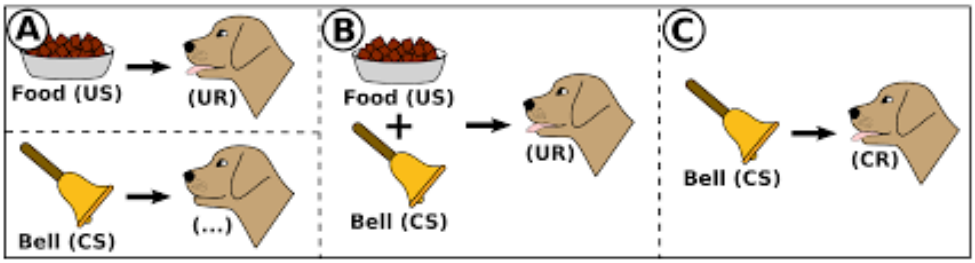
CLASSICAL CONDITIONING

This type of learning was first investigated by Ivan P. Pavlov. He was primarily interested in the physiology of digestion. During his studies he noticed that dogs, on whom he was doing his experiments, started secreting saliva as soon as they saw the empty plate in which food was served. As you must be aware, saliva secretion is a reflexive response to food or something in the mouth. Pavlov designed an experiment to understand this process in detail in which dogs were used once again. In the first phase, a dog was placed in a box and harnessed. The dog was left in the box for some time. This was repeated a number of times on different days. In the meantime, a simple surgery was conducted, and one end of a tube was inserted in the dog's jaw and the other end of the tube was put in a measuring glass.



The experimental setup is illustrated in the above Figure. In the second phase of the experiment, the dog was kept hungry and placed in harness with one end of the tube ending in the jaw and the other end in the glass jar. A bell was sounded and immediately thereafter food (meat powder) was served to the dog. The dog was allowed to eat it. For the next few days, everytime the meat powder was presented, it was preceded by the sound of a bell. After a number of such trials, a test trial was introduced in which everything was the same as the previous trials except that no food followed the sounding of the bell. The dog still salivated to the sound of the bell, expecting presentation of the meat powder as the sound of bell had come to be connected with it. This association between the bell and food resulted in acquisition of a new response by the dog, i.e. salivation to the sound of the bell. This has been termed as conditioning. You may have noticed that all dogs salivate when they are presented with food. Food is thus an Unconditioned Stimulus (US) and salivation which follows it, an Unconditioned Response (UR). After conditioning, salivation started to occur in the presence of the sound of the bell. The bell becomes a Conditioned Stimulus (CS) and saliva secretion a Conditioned Response (CR). This kind of conditioning is called classical conditioning. It is obvious that the learning situation in classical conditioning is one of S–S learning in which one stimulus (e.g., sound of bell) becomes a signal for another stimulus (e.g., food). Here one stimulus signifies the possible occurrence of another stimulus.

Here, Pavlov termed the meat powder, a natural stimulus as unconditioned stimulus (US). the natural response to meat powder is salivation; it did not depend on any learning. This natural response was termed as unconditioned response (UR). The neutral stimulus was the bell and was termed as conditioned stimulus (CS). This is because the dog had to learn to associate food with the bell and salivate at the sound of the bell. He paired the Bell sound with powder several times. So, the salivation is the response to the sound of the bell and was termed as conditioned response (CR).



CLASSICAL CONDITIONING

Examples of classical conditioning abound in everyday life. Imagine you have just finished your lunch and you are feeling satisfied. Then you see some sweet dish served on the adjoining table. This signals its taste in your mouth, and triggers the secretion of saliva. You feel like eating it. This is a conditioned response (CR). Let us take another example. In the early stages of childhood, one is naturally afraid of any loud noise. Suppose a small child catches an inflated balloon which bursts in her/his hands making a loud noise. The child becomes afraid. Now the next time s/he is made to hold a balloon, it becomes a signal or cue for noise and elicits fear response. This happens because of contiguous presentation of balloon as a conditioned stimulus (CS) and loud noise as an unconditioned stimulus (US).

Classical conditioning comprises of 4 elements –

1. **Unconditioned stimulus (US)**which causes to react in a way
2. **Unconditioned response (UR)**takes place when the US is present
3. **Conditioned stimulus (CS)**object that does not bring about the desired response
4. **Conditioned response (CR)**particular behavior that the organism learns to produce in the presence of CS

Determinants of Classical Conditioning

How quickly and strongly acquisition of a response occurs in classical conditioning depends on several factors. Some of the major factors influencing learning a CR are described below:

1. Time Relations between Stimuli: The classical conditioning procedures, discussed below, are basically of four types based on the time relations between the onset of conditioned stimulus (CS) and unconditioned stimulus (US). The first three are called forward conditioning procedures, and the fourth one is called backward conditioning procedure. The basic experimental arrangements of these procedures are as follows:

a) When the CS and US are presented together, it is called simultaneous conditioning.

b) In delayed conditioning, the onset of CS precedes the onset of US. The CS ends before the end of the US.

c) In trace conditioning, the onset and end of the CS precedes the onset of US with some time gap between the two.

d) In backward conditioning, the US precedes the onset of CS.

It is now well established that delayed conditioning procedure is the most effective way of acquiring a CR. Simultaneous and trace conditioning procedures do lead to acquisition of a CR, but they require greater number of acquisition trials in comparison to the delayed conditioning procedure. It may be noted that the acquisition of response under backward conditioning procedure is very rare.

2. Type of Unconditioned Stimuli: The unconditioned stimuli used in studies of classical conditioning are basically of two types, i.e., appetitive and aversive. Appetitive unconditioned stimuli automatically elicit approach responses, such as eating, drinking, caressing, etc. These responses give satisfaction and pleasure. On the other hand, aversive US, such as noise, bitter taste, electric shock, painful injections, etc. are painful, harmful, and elicit avoidance and escape responses. It has been found that appetitive classical conditioning is slower and requires greater number of acquisition trials, but aversive classical conditioning is established in one, two or three trials depending on the intensity of the aversive US.

3. Intensity of Conditioned Stimuli: This influences the course of both appetitive and aversive classical conditioning. More intense conditioned stimuli are more effective in accelerating the acquisition of conditioned responses. It means that the more intense the conditioned stimulus, the fewer are the number of acquisition trials needed for conditioning.

Principles of Classical Conditioning

1.Extinction-This phenomenon occurs when a conditioned response decreases in frequency and finally disappears. The speed with which extinction takes place depends on the animal, the response, the nature of the stimulus and number and spacing of conditioning trials. In Pavlov's experiment if the bell (CS) is presented with no meat powder (US) repeatedly, the dog may salivate as usual for 2-3 trials when the celebration stops the phenomenon is termed as extinction.

2. Spontaneous recovery- After the extinction of CR, the dog was brought back to the experimental table the next day and the bell was rung again. The dog responded with a little salivation, this happens because the old perception of relation between bell and food.

3.Higher order conditioning- Here, a neutral stimulus (US) can become a second condition stimulus (CS) by pairing it within already established CS. Example a dog has been conditioned to salivate to the sound of the bell, the dog can be further conditioned to salivate to a flash of light.

4. **Stimulus Generalization-** Once the dog is conditioned to salivate to the sound of the bell, any sounds of similar intensity can make the dog respond with salivation. Example - a buzzer sound.

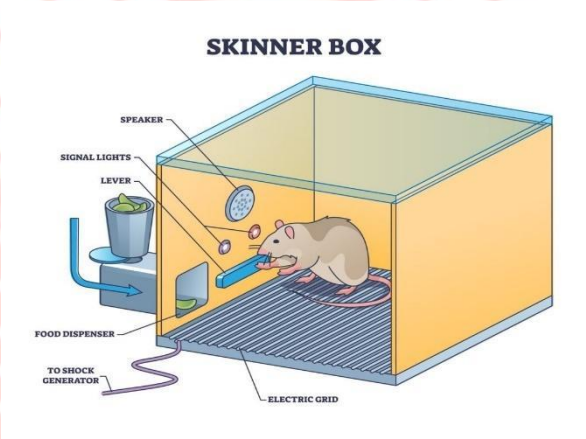
5. Stimulus Discrimination- Here the dog is initially condition to respond to a tone of 1000 hertz. If a tone of say500 hertz is presented but not followed by food (US), after a few trials the dog learns to salivate only for the 1000 hertz and not to the 500 hertz tone.

JOHN B. WATSON: EARLY CLASSICAL CONDITIONING WITH HUMANS

John B. Watson further extended Pavlov's work and applied it to human beings. In 1921, Watson studied Albert, an 11 month old infant child. The goal of the study was to condition Albert to become afraid of a white rat by pairing the white rat with a very loud, jarring noise (UCS). At first, Albert showed no sign of fear when he was presented with rats, but once the rat was repeatedly paired with the loud noise (UCS), Albert developed a fear of rats. It could be said that the loud noise (UCS) induced fear (UCR).

OPERANT/INSTRUMENTAL CONDITIONING

This type of conditioning was first investigated by B.F. Skinner. Skinner studied occurrence of voluntary responses when an organism operates on the environment. He called them Operants. Operants are those behaviors or responses, which are emitted by animals and human beings voluntarily and are under their control. The term operant is used because the organism operates on the environment. Conditioning of operant behavior is called operant conditioning.



Skinner conducted his studies on rats and pigeons in specially made boxes, called the Skinner Box. A hungry rat (one at a time) is placed in the chamber, which was so built that the rat could move inside but could not come out. In the chamber there was a lever, which was connected to a food container kept on the top of the chamber. When the lever is pressed, a food pellet drops on the plate placed close to the lever. While moving around and pawing the walls (exploratory behavior), the hungry rat accidentally presses the lever and a food pellet drops on the plate. The hungry rat eats it. In the next trial, after a while the exploratory behavior again starts. As the number of trials increases, the rat takes lesser and lesser time to press the lever for food. Conditioning is complete when the rat presses the lever immediately after it is placed in the chamber. It is obvious that lever pressing is an operant response and getting food is its consequence.

In the above situation the response is instrumental in getting the food. That is why, this type of learning is also called instrumental conditioning. Examples of instrumental conditioning abound in our everyday life. Examples of instrumental conditioning abound in our everyday life. Children who want to have some sweets in the absence of their mother learn to locate the jar in which mother hides the sweets for safekeeping and eat it. Children learn to be polite and say 'please' to get favours from their parents and others. One learns to operate mechanical gadgets such as radio, camera, T.V., etc. based on the principle of instrumental

conditioning. As a matter of fact human beings learn short cuts to attain desired goals or ends through instrumental conditioning.

Determinants of Operant Conditioning

Operant or instrumental conditioning is a form of learning in which behavior is learned, maintained or changed through its consequences. Such consequences are called reinforcers. A reinforcer is defined as any stimulus or event, which increases the probability of the occurrence of a (desired) response. A reinforcer has numerous features, which affect the course and strength of a response. They include its types – positive or negative, number or frequency, quality – superior or inferior, and schedule – continuous or intermittent (partial). All these features influence the course of operant conditioning. Another factor that influences this type of learning is the nature of the response or behavior that is to be conditioned. The interval or length of time that lapses between occurrence of response and reinforcement also influences operant learning. Let us examine some of these factors in detail.

Reinforcement may be positive or negative.

Positive reinforcement involves stimuli that have pleasant consequences. They strengthen and maintain the responses that have caused them to occur. Positive reinforcers satisfy needs, which include food, water, medals, praise, money, status, information, etc. Negative reinforcers involve unpleasant and painful stimuli. Responses that lead organisms to get rid of painful stimuli or avoid and escape from them provide negative reinforcement. Thus, negative reinforcement leads to learning of avoidance and escape responses. For instance, one learns to put on woollen clothes, burn firewood or use electric heaters to avoid the unpleasant cold weather. One learns to move away from dangerous stimuli because they provide negative reinforcement. It may be noted that negative reinforcement is not punishment. Use of punishment reduces or suppresses the response while a negative reinforcer increases the probability of avoidance or escape response. For instance, drivers and co-drivers wear their seat belts to avoid getting injured in case of an accident or to avoid being fined by the traffic police.

It should be understood that no punishment suppresses a response permanently. Mild and delayed punishment has no effect. The stronger the punishment, the more lasting is the suppression effect but it is not permanent. Sometimes punishment has no effect irrespective of its intensity. On the contrary, the punished person may develop dislike and hatred for the punishing agent or the person who administers the punishment.

Schedules of Reinforcement

A reinforcement schedule is the arrangement of the delivery of reinforcement during conditioning trials. Each schedule of reinforcement influences the course of conditioning in its own way; and thus, conditioned responses occur with differential characteristics. The organism being subjected to operant conditioning may be given reinforcement in every acquisition trial or in some trials it is given and in others it is omitted. Thus, the reinforcement may be continuous or intermittent. When a desired response is reinforced every time it occurs, we call it continuous reinforcement. In contrast, in intermittent schedules responses are sometimes reinforced, sometimes not. It is known as partial reinforcement and has been found to produce greater resistance to extinction – than is found with continuous reinforcement.

Delayed Reinforcement The effectiveness of reinforcement is dramatically altered by delay

in the occurrence of reinforcement. It is found that delay in the delivery of reinforcement leads to poorer level of performance. It can be easily shown by asking children which reward they will prefer for doing some chore. Smaller rewards immediately after doing the chore will be preferred rather than a big one after a long gap.

Reinforcement is the operation of administering a reinforce by the experimenter. Reinforcers are stimuli that increase the rate or probability of the responses that precede. We have noted that reinforced responses increase in rate, while non-reinforced responses decrease in rate.

a. **A positive reinforcer** increases the rate of response that precedes its presentation.
b. **Negative reinforcers** increase the rate of the response that precedes their removal or termination. The reinforcers may be primary or secondary.
c. **A primary reinforcer** is biologically important since it determines the organism's survival (e.g., food for a hungry organism).
d. **A secondary reinforcer** is one which has acquired characteristics of the reinforcer because of the organism's experience with the environment. We frequently use money, praise, and grades as reinforcers. They are called secondary reinforcers. Systematic use of reinforcers can lead to the desired response. Such a response is shaped by reinforcing successive approximations to the desired response.

When learning takes place, be it classical or operant conditioning, it involves the occurrence of certain processes. These include reinforcement, extinction or non-occurrence of learned response, generalization of learning to other stimuli under some specifiable conditions, discrimination between reinforcing and non-reinforcing stimuli, and spontaneous recovery.

	Reinforcement (behavior increases)	Punishment (behavior decreases)
Positive (a stimulus is added)	**Positive Reinforcement** Adds *pleasant stimulus* to *increase a behavior.* Example: Giving a horse a treat when it approaches you.	**Positive Punishment** Adds *aversive stimulus* to *decrease a behavior.* Example: Smacking a horse's snout when it bites you.
Negative (a stimulus is removed)	**Negative Reinforcement** Removes *aversive stimulus* to *increase a behavior.* Example: Releasing pressure on a horse's shoulder when it moves its front end away from you.	**Negative Punishment** Removes *pleasant stimulus* to *decrease a behavior.* Example: Ceasing to scratch a horse's itchy spot when it leans into you.

Extinction means disappearance of a learned response due to removal of reinforcement from the situation in which the response used to occur. If the occurrence of CS-CR is not followed by the US in classical conditioning, or lever pressing is no more followed by food pellets in the Skinner box, the learned behavior will gradually be weakened and ultimately disappear. Learning shows resistance to extinction. It means that even though the learned response is now not reinforced, it would continue to occur for sometime. However, with increasing number of trials without r einforcement, the response strength gradually diminishes and ultimately it stops occurring. How long a learned response shows resistance to extinction depends on a number of factors. It has been found that with increasing number of reinforced trials resistance to extinction increases and learned response reaches its highest level. At this

level performance gets stabilized. After that the number of trials does not make a difference in the response strength. Resistance to extinction increases with increasing number of reinforcements during acquisition trials, beyond that any increase in number of reinforcements reduces the resistance to extinction. Studies have also indicated that as the amount of reinforcement (number of food pellets) increases during the acquisition trials, resistance to extinction decreases. If the reinforcement is delayed during acquisition trials, the resistance to extinction increases. Reinforcement in every acquisition trial makes the learned response to be less resistant to extinction. In contrast, intermittent or partial reinforcement during acquisition trials makes a learned response more resistant to extinction.

Generalization and Discrimination

The processes of generalization and discrimination occur in all kinds of learning. However, they have been extensively investigated in the context of conditioning. Suppose an organism is conditioned to elicit a CR (saliva secretion or any other reflexive response) on presentation of a CS (light or sound of bell). After conditioning is established, and another stimulus similar to the CS (e.g., ringing of telephone) is presented, the organism makes the conditioned response to it. This phenomenon of responding similarly to similar stimuli is known as generalization. Again, suppose a child has learned the location of a jar of a certain size and shape in which sweets are kept. Even when the child's mother is not around, the child finds the jar and obtains the sweets. This is a learned operant. Now the sweets are kept in another jar of a different size and shape and at a different location in the kitchen. In the absence of the mother the child locates the jar and obtains the sweets. This is also an example of generalization. When a learned response occurs or is elicited by a new stimulus, it is called Generalization. Another process, which is complimentary to generalization, is called discrimination. Generalization is due to similarity while discrimination is a response due to difference. For example, suppose a child is conditioned to be afraid of a person with a long moustache and wearing black clothes. In subsequent situation, when s/he meets another person dressed in black clothes with a beard, the child shows signs of fear. The child's fear is generalized. S/he meets another stranger who is wearing grey clothes and is clean-shaven. The child shows no fear. This is an example of discrimination. Occurrence of generalization means failure of discrimination. Discriminative response depends on the discrimination capacity or discrimination learning of the organism.

Spontaneous Recovery

Spontaneous recovery occurs after a learned response is extinguished. Suppose an organism has learned to make a response for getting reinforcement, then the response is extinguished and sometime lapses. A question now may be asked, whether the response is completely extinguished, and will not occur if the CS is presented. It has been demonstrated that after lapse of considerable time, the learned or CR recovers and occurs to the CS. The amount of spontaneous recovery depends on the duration of the time lapsed after the extinction session. The longer the duration of time lapsed, the greater is the recovery of learned response. Such a recovery occurs spontaneously.

OBSERVATIONAL LEARNING

The next form of learning takes place by observing others. Earlier this form of learning was called imitation. Bandura and his colleagues in a series of experimental studies investigated

observational learning in detail. In this kind of learning, human beings learn social behaviors, therefore, it is sometimes called social learning. In many situations individuals do not know how to behave. They observe others and emulate their behavior. This form of learning is called modeling.

In order to understand the nature of observational learning we may refer to the studies conducted by Bandura. In one of his well-known experimental study, Bandura showed a film of five minutes duration to children. The film shows that in a large room there are numerous toys including a large sized 'Bobo' doll. Now a grown-up boy enters the room and looks around. The boy starts showing aggressive behavior towards the toys in general and the bobo doll in particular. He hits the doll, throws it on the floor, kicking it and sitting on it. This film has three versions. In one version a group of children see the boy (model) being rewarded and praised by an adult for being aggressive to the doll. In the second version another group of children see the boy being punished for his aggressive behavior. In the third version the third group of children are not shown the boy being either rewarded or punished.

After viewing a specific version of the film all the three groups of children were placed in an experimental room in which similar toys were placed around. The children were allowed to play with the toys. These groups were secretly observed and their behaviors noted. It was found that those children who saw aggressive behavior being rewarded were most aggressive; children who had seen the aggressive model being punished were least aggressive. Thus, in observational learning observers acquire knowledge by observing the model's behavior, but performance is influenced by model's behavior being rewarded or punished.

You must have noticed that children observe adults' behaviors, at home and during social ceremonies and functions. They enact adults in their plays and games. For instance, young children play games of marriage ceremonies, birthday parties, thief and policeman, housekeeping, etc. Actually, they enact in their games what they observe in society, on television, and read in books. Children learn most of the social behaviors by observing and emulating adults. The way to put on clothes, dress one's hair, and conduct oneself in society are learned through observing others. It has also been shown that children learn and develop various personality characteristics through observational learning. Aggressiveness, prosocial behavior, courtesy, politeness, diligence, and indolence are acquired by this method of learning.

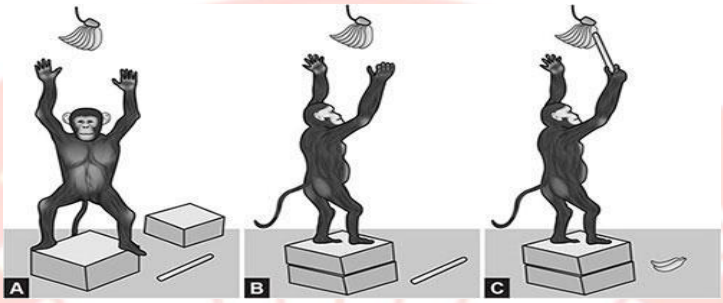
COGNITIVE LEARNING

Some psychologists view learning in terms of cognitive processes that underlie it. They have developed approaches that focus on such processes that occur during learning rather than concentrating solely on S-R and S-S connections, as we have seen in the case of classical and operant conditioning. Thus, in cognitive learning, there is a change in what the learner knows rather than what s/he does. This form of learning shows up in insight learning and latent learning.

Insight Learning

Learning that appears to occur in a flash. This type of learning is synonymous to the **'aha experience'.** Theory of insight learning was proposed by Wolfgang Kohler Insight learning refers to the sudden realization of the solution of any problem without repeated trials or continuous practices. In this type of learning, one draws from previous experiences and involve a new way of perceiving logical and cause - effect relationship.

Experiment- Kohler demonstrated a model of learning which could not be readily explained by conditioning. He performed a series of experiments with chimpanzees that involved solving complex problems. Kohler placed chimpanzees in an enclosed play area where food was kept out of their reach. Tools such as poles and boxes were placed in the enclosure. The chimpanzees rapidly learned how to use a box to stand on or a pole to move the food in their direction. In this experiment, learning did not occur as a result of trial and error and reinforcement, but came about in sudden flashes of insight.

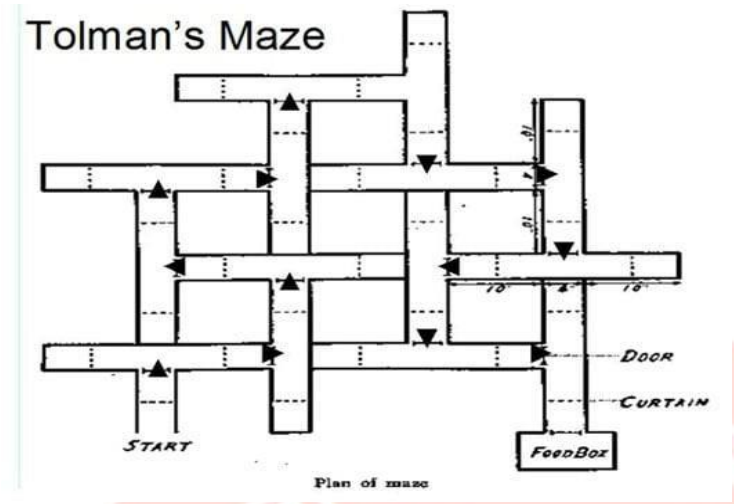


The chimpanzees would roam about the enclosure for some time and then suddenly would stand on a box, grab a pole and strike a banana, which was out of normal reach above the enclosure. The chimpanzee exhibited what Kohler called insight learning – the process by which the solution to a problem suddenly becomes clear. In a normal experiment on insight learning, a problem is presented, followed by a period of time when no apparent progress is made and finally a solution suddenly emerges. In insight learning, sudden solution is the rule. Once the solution has appeared, it can be repeated immediately the next time the problem is confronted. Thus, it is clear that what is learned is not a specific set of conditioned associations between stimuli and responses but a cognitive relationship between a means and an end. As a result, insight learning can be generalized to other similar problem situations.

Latent Learning

Another type of cognitive learning is known as latent learning. In latent learning, a new behavior is learned but not demonstrated until reinforcement is provided for displaying it. Tolman made an early contribution to the concept of latent learning. Cognitive maps as an example of latent learning in rats. Tolman coined the term cognitive map, which is an internal representation (or image) of an external environmental feature or landmark. He thought that individuals acquire large numbers of cues (i.e., signals) from the environment and could use these to build a mental image of an environment (i.e., a cognitive map). By using this internal representation of physical space, they could get to the goal by knowing where it is in a complex set of environmental features. Shortcuts and changeable routes are possible with this model.

To have an idea of latent learning, we may briefly understand his experiment. Tolman put two groups of rats in a maze and gave them an opportunity to explore. In one group, rats found food at the end of the maze and soon learned to make their way rapidly through the maze.



In his experiments with rats in mazes, Tolman observed that even without direct rewards, rats seemed to develop a "mental map" of the maze. When later introduced to a reward, these rats could navigate the maze more efficiently than those without prior exposure, suggesting they had learned about

On the other hand, rats in the second group were not rewarded and showed no apparent signs of learning. But later, when these rats were reinforced, they ran through the maze as efficiently as the rewarded group. Tolman contended that the unrewarded rats had learned the layout of the maze early in their explorations. They just never displayed their latent learning until the reinforcement was provided. Instead, the rats developed a cognitive map of the maze, i.e. a mental representation of the spatial locations and directions, which they needed to reach their goal.

VERBAL LEARNING

Verbal learning is different from conditioning and is limited to human beings. Human beings, as you must have observed, acquire knowledge about objects, events, and their features largely in terms of words. Words then come to be associated with one another. Psychologists have developed a number of methods to study this kind of learning in a laboratory setting. Each method is used to investigate specific questions about learning of some kind of verbal material. In the study of verbal learning, psychologists use a variety of materials including nonsense syllables, familiar words, unfamiliar words, sentences, and paragraphs.

Methods used in Studying Verbal Learning

1. **Paired-Associates Learning:** This method is similar to S-S conditioning and S-R learning. It is used in learning some foreign language equivalents of mother tongue words. First, a list of paired-associates is prepared. The first word of the pair is used as the stimulus, and the second word as the response. Members of each pair may be from the same language or two different languages. The first members of the pairs (stimulus term) are nonsense syllables (consonant vowel-consonant), and the second are English nouns (response term). The learner is first shown both the stimulus- response pairs together, and is instructed to remember and recall the response after the presentation of each stimulus term. After that a learning trial begins. One by one the stimulus words are presented and the participant tries to give the correct response term. In case of failure, s/he is shown the response word. In one trial all the stimulus terms are shown. Trials continue until the participant gives all the response words without a single error. The total number of trials taken to reach the criterion becomes the measure of paired-associates learning.

2. **Serial Learning:** This method of verbal learning is used to find out how participants learn the lists of verbal items, and what processes are involved in it. First, lists of verbal items, i.e.

nonsense syllables, most familiar or least familiar words, interrelated words, etc. are prepared. The participant is presented the entire list and is required to produce the items in the same serial order as in the list. In the first trial, the first item of the list is shown, and the participant has to produce the second item. If s/he fails to do so within the prescribed time, the experimenter presents the second item. Now this item becomes the stimulus and the participant has to produce the third item that is the response word. If s/he fails, the experimenter gives the correct item, which becomes the stimulus item for the fourth word. This procedure is called serial anticipation method. Learning trials continue until the participant correctly anticipates all the items in the given order.

3. **Free Recall:** In this method, participants are presented a list of words, which they read and speak out. Each word is shown at a fixed rate of exposure duration. Immediately after the presentation of the list, the participants are required to recall the words in any order they can. Words in the list may be interrelated or unrelated. More than ten words are included in the list. The presentation order of words varies from trial to trial. This method is used to study how participants organise words for storage in memory. Studies indicate that the items placed in the beginning or end of the lists are easier to recall than those placed in the middle, which are more difficult to recall.

Determinants of Verbal Learning

Verbal learning has been subjected to the most extensive experimental investigations. These studies have indicated that the course of verbal learning is influenced by a number of factors. The most important determinants are the different features of the verbal material to be learned. They include length of the list to be learned and meaningfulness of the material. Meaningfulness of material is measured in several ways. The number of associations elicited in a fixed time, familiarity of the material and frequency of usage, relations among the words in the list, and sequential dependence of each word of the list on the preceding words, are used for assessing meaningfulness. Lists of nonsense syllables are available with different levels of associations. The nonsense syllables should be selected from a list containing the same association value. On the basis of research findings, the following generalizations have been made. Learning time increases with increase in length of the list, occurrence of words with low association values or lack of relations among the items in the list. The more time it takes to learn the list, stronger will be the learning. In this respect psychologists have found that the total time principle operates. This principle states that a fixed amount of time is necessary to learn a fixed amount of material, regardless of the number of trials into which that time is divided. The more time it takes to learn, the stronger becomes the learning.

If participants are not restricted to the serial learning method and are allowed to give free recall, verbal learning becomes organizational. It implies that in free recall participants recall the words not in their order of presentation, but in a new order or sequence. Bousfield first demonstrated this experimentally. He made a list of 60 words that consisted of 15 words drawn from each of the four semantic categories, i.e. names, animals, professions, and vegetables. These words were presented to participants one by one in random order. The participants were required to make free recall of the words. However, they recalled the words of each category together. He called it category clustering. It is worth noting that, though, the words were presented randomly the participants organized them category-wise in recall. Here category clustering occurred because of the nature of the list. It has also been demonstrated that free recall is always organized subjectively. Subjective organisation shows that the participants organize words or items in their individual ways and recall accordingly.

Verbal learning is usually intentional but a person may learn some features of the words unintentionally or incidentally. In this kind of learning, participants notice features such as whether two or more words rhyme, start with identical letters, have same vowels, etc. Thus, verbal learning is both intentional as well as incidental.

Very Short Questions/True Facts (One Sentence):

1. **Model:** person who performs a behavior that serves as an example (in observational learning)
2. **Observational Learning**: type of learning that occurs by watching others
3. **Vicarious Punishment:** process where the observer sees the model punished, making the observer less likely to imitate the model's behavior
4. **Vicarious Reinforcement**: process where the observer sees the model rewarded, making the observer more likely to imitate the model's behavior
5. **Associative Learning**: form of learning that involves connecting certain stimuli or events that occur together in the environment (classical and operant conditioning)
6. **Instinct:** unlearned knowledge, involving complex patterns of behavior; instincts are thought to be more prevalent in lower animals than in humans
7. **Learning**: change in behavior or knowledge that is the result of experience
8. **Reflex:** unlearned, automatic response by an organism to a stimulus in the environment
9. **Escape Learning means-**learning by negative reinforcement
10. **Discriminative Stimulus-**A stimulus that may influence operant behaviour.

Short Question (100-120 words):

1. Define Learning.

Learning is the process of acquiring new understanding, knowledge, behaviors, skills, values, attitudes, and preferences. Learning is the alteration of behavior as a result of individual experience. In psychology, "learning" refers to a relatively permanent change in behavior, knowledge, or capability resulting from experience. Learning involves the acquisition of new information, skills, attitudes, or behaviors through various processes. Psychologists in general define Learning as relatively permanent behavioural modifications which take place as a result of experience. This definition of learning stresses on three important elements of learning:

- **Learning involves a behavioural change which can be better or worse.**
- **This behavioural change should take place as a result of practice and experience. Changes resulting from maturity or growth cannot be considered as learning**
- **This behavioural change must be relatively permanent and last for a relatively long time enough.**

2. Who proposed the principles of Learning?

E.L Thorndike proposed the principles of learning. Principles of learning according to him:
Law of effect: Responses that are followed by positive consequences are more likely to be repeated, while responses that are followed by negative consequences are less likely to be repeated.
Law of readiness: Learning is most effective when the learner is ready to learn and is motivated to do so.
Law of exercise: Learning occurs through repetition and practice.
Law of multiple responses: There are often multiple responses to a given stimulus, and learning

occurs through the strengthening of the connections between the appropriate response and the stimulus.

3. What is the law of effect?

The law of effect principle developed by Edward Thorndike suggested that responses closely followed by satisfaction will become firmly attached to the situation and, therefore, more likely to reoccur when the situation is repeated. Conversely, if the situation is followed by discomfort, the connections to the situation will become weaker, and the behavior of response is less likely to occur when the situation is repeated.

5. Who was the founder of observational leaning?

Albert Bandura was the founder of Observational learning.

6. Define Classical Conditioning.

It's a type of learning in which an initially neutral stimulus—the conditioned stimulus (CS)— when paired with a stimulus that elicits a reflex response—the unconditioned stimulus (US)— results in a learned, or conditioned, response (CR) when the CS is presented.

7. What is Operant Conditioning?

Operant conditioning (sometimes referred to as instrumental conditioning) is a method of learning that occurs through rewards and punishments for behavior. Through operant conditioning, an association is made between a behavior and a consequence for that behavior.

8. Explain Learning through Definitions?

John B Watson is one amongst the first thinkers who has proven that behavioral changes occur as a result of learning. Watson is believed to be the founder of Behavioral school of thought, which gained its prominence or acceptability around the first half of the 20th century.

Gales defined learning as "the behavioral modification which occurs as a result of experience as well as training."

Crow and Crow defined learning as the process of acquisition of knowledge, habits and attitudes.

According to **E.A, Peel,** "Learning can be described as a change in the individual which takes place as a result of the environmental change."

H.J. Klausmeir described Learning as a process which leads to some behavioural change as a result of some experience, training, observation, activity, etc.

9. Discuss Types of Learning?

1. **Motor Learning:** Our day-to-day activities like walking, running, driving, etc, must be learnt for ensuring a good life. These activities to a great extent involve muscular coordination.
2. **Verbal Learning**: It is related with the language which we use to communicate and various other forms of verbal communication such as symbols, words, languages, sounds, figures and signs.
3. **Concept Learning:** This form of learning is associated with higher order cognitive processes like intelligence, thinking, reasoning, etc, which we learn right from our childhood. Concept learning involves the processes of abstraction and generalization, which is very useful for identifying or recognizing things.
4. **Discrimination Learning:** Learning which distinguishes between various stimuli with its appropriate and different responses is regarded as discrimination stimuli.

10. Explain Steps in Insight Learning.

According to Kohler certain steps are involved in learning which are discussed below:

Identifying the problem. The motivated Teamer identifies the problems involved in attaining

the goal.
Initial efforts. Initial efforts are in the form of simple trial and error mechanism.
Incubation of ideas. It involves a period of hesitation or pause' towards the problematic situation. During this period, the mind keeps the task alive.
Insight development. A flash of lightening comes in mind to solve the problematic situation.
Repetition and Generalization. After obtaining an insightful solution to the problem the individual applies it in another situation which requires a similar type of solution. The individual generalizes those similar problems require the same type of solution.

Long/Extensive Questions (3 to 5 Pages)

1. Define Classical Conditioning. Explain its principles. (Refer to page no. 55, 56, and 57)
2. Define Operant Conditioning. Explain its principles. (Refer to page no. 58, 59, and 60)
3. Define Types of Behavioral Learning.

The Behavioral School of Thought which was founded by John B Watson which was highlighted in his seminal work, "Psychology as the Behaviorist View It", stressed on the fact that Psychology is an objective science, hence mere emphasis on the mental processes should not be considered as such processes cannot be objectively measured or observed.

Watson tried to prove his theory with the help of his famous Little Albert Experiment, by way of which he conditioned a small kid to be scared of a white rat. The behavioural psychology described three types of learning: Classical Conditioning, Observational Learning and Operant Conditioning.

Classical Conditioning: In case of Classical Conditioning, the process of learning is described as a Stimulus-Response connection or association. Classical Conditioning theory has been explained with the help of Pavlov's Classic Experiment, in which the food was used as the natural stimulus which was paired with the previously neutral stimuli that's a bell in this case. By establishing an association between the natural stimulus (food) and the neutral stimuli (sound of the bell), the desired response can be elicited. This theory will be discussed in detail in the next few articles.
Operant Conditioning: Propounded by scholars like Edward Thorndike firstly and later by B.F. Skinner, this theory stresses on the fact that the consequences of actions shape the behaviour. The theory explains that the intensity of a response is either increased or decreased as a result of punishment or reinforcement. Skinner explained how with the help of reinforcement one can strengthen behaviour and with punishment reduce or curb behaviour. It was also analyzed that the behavioural change strongly depends on the schedules of reinforcement with focus on timing and rate of reinforcement.
Observational Learning: The Observational Learning process was propounded by Albert Bandura in his Social Learning Theory, which focused on learning by imitation or observing people's behaviour. For observational learning to take place effectively, four important elements will be essential: Motivation, Attention, Memory and Motor Skills.

4. Discuss Learning by Observation.
According to Albert Bandura, learning cannot simply be based merely on associations or reinforcements which he has mentioned in his writings in his book Social Learning Theory which was published in 1977. Instead, his focus was on learning based on observation, which he has proven through his well-known Bobo Doll experiment. He reckoned that children keenly observe their surroundings and the behaviour of people around them particularly their

caregivers, teachers and siblings and try to imitate those behaviour in their day to day life. He also tried proving through his experiment that children can easily imitate the negative behaviour or actions.

Another important principle of Bandura's Social Learning Theory was that learning something by way of observation, need not necessarily mean that it would lead to a change in the behaviour. This behavioral change is entirely influenced by the felt need or motivation of a person to endorse and adopt a behavioral change.

Key Steps involved in Observational Learning

i. **Attention:** Attention is very important for learning to take place effectively by following observational techniques. A novel concept or a unique idea is expected to attract the attention far more strongly than those which are routine or mundane in nature.
ii. **Retention:** It is the ability to store the learnt information and recall it later, which is equally affected by a number of factors.
iii. **Reproduction:** It involves practicing or emulating the learnt behaviour, which will further lead to the advancement of the skill.
iv. **Motivation:** Motivation to imitate the learnt behaviour of a model depends a lot on the reinforcement and punishment. For example, an office-goer may be motivated to report to office on time by seeing his colleague being rewarded for his punctuality and timeliness.

5. Explain the Key Components of Operant Conditioning.

a. Reinforcement: Reinforcements strengthen or increase the intensity of behaviour. This can be Positive and Negative.

- **Positive Reinforcement**: When a favourable event or an outcome is associated with behaviour in the form of a reward or praise, it is called as positive reinforcement. For example, a boss may associate bonus with outstanding achievements at work.

- **Negative Reinforcement:** This involves removal of an unfavourable or an unpleasant event after a behavioural outcome. In this case, the intensity of a response is strengthened by removing the unpleasant experiences.

b. Punishment: The objective of punishment is to decrease the intensity of a behavioural outcome, which may be negative or positive.

- **Positive Punishment:** This involves application of punishment by presenting an unfavourable event or outcome in response to a behaviour. Spanking for an unacceptable behaviour is an example of positive punishment.

- **Negative Punishment:** It is associated with the removal of a favourable event or an outcome in response to a behaviour which needs to be weakened. Holding the promotion of an employee for not being able to perform up to the expectations of the management can be an example of a negative punishment.

c. Reinforcement Schedules: According to Skinner, the schedule of reinforcement with focus on timing as well as the frequency of reinforcement, determined how quickly new behaviour can be learned and old behaviours can be altered.

6. How does classical conditioning demonstrate learning by association?

Classical conditioning is a type of learning in which an organism learns to associate stimulus. Conditioning is the simplest form of learning. Classical conditioning was first explained in Pavlovs experiments in which a dog was kept on a harness with a tube attached to the dogs jaw on one end, a measuring jar on the other end. The dogs was kept hungry in the course of experiments, every time the dogs was given food a bell was rung before it, slowly the dog become conditioned to believe that the ringing bell meant that food was coming. So, he began salivating at the sound at the bell. The dog continued to salivate even when food was not given after the bell. Hence, salivation became a conditioned response to the conditioned stimulus. Various forms of classical conditioning are:

1. Unconditioned stimulus (US): This stimulus consistently evoked a response or is reliably followed by one or it has potential capacity to evoke a natural response. (food)

2. Conditioned stimulus (CS): It is also known as a neutral stimulus because except for an altering or intentional response, the first few times it is presented, it does not evoke a specific response.

Any stimuli which lacks natural capacity to evoke natural response but develops this capacity with consistent pairing with US. For example bell.

3. Unconditioned Response (UR): The response that reliably follows the unconditioned stimulus is known as the unconditioned response, e.g. Saliva due to food. (iv) Conditioned 4. **Response (CR):** When presentation of the originally neutral conditioned stimulus evokes a response.

This response is what is learned in classical conditioning, e.g. Saliva s a response to the bell.

Determinants of classical conditioning:

1. Time Relations between stimuli: In classical conditioning the first three are called Forward Conditioning Procedures and the forth one is called Backward Conditioning.

The basic experimental arrangements of these procedures are as follows:

Simultaneous Conditioning: When the CS and US are presented together.

It is effective to acquire CR but requires greater number of trials.

Delayed Conditioning: The onset of CS precedes the onset of US. The CS ends before the end of the US. It is most effective way of acquiring CR.

Trace Conditioning: The onset and the end of the CS precedes the onset of US with some time gap between the two. It is effective but requires greater number of trials.

Backward conditioning: The US precedes the onset of CS. It is least effective way to acquire CR.

2. Type of unconditioned stimuli: The unconditioned stimuli used in studies of classical conditioning are of two types: Appetitive e.g. eating drinking etc. according to researches it is slower and requires greater number of trials Aversive e.g. Noise, bitter taste etc. classical conditioning is established in one, two or three trials so it is more effective.

3. Intensity of conditioned stimuli: This influences the course of both appetitive and aversive classical conditioning. More intense conditioned stimuli are more effective in accelerating the acquisition of conditioned responses, e.g.: The more intense the conditioned stimulus, the fewer are the number of acquisition trials needed for conditioning, ie intense irritating noise is more effective.

7. Define operant conditioning. Discuss the factors that influence the course of operant conditioning. (Refer to page no. 58, and 59)

8. A good role model is very important for a growing up child. Discuss the kind of learning that supports it. (Refer to the Observational learning; page no. 62)

9. What is learning? What are its distinguishing features? (Refer to page no. 54)

10. Explain the procedures for studying verbal learning.

Verbal Learning: The process of learning to respond verbally to verbal stimulus, which may include symbols, nonsense syllables and lists of words.

Procedures for studying verbal learning are:

1. Paired—Associated learning:

This method is similar to S-S conditioning and S-R learning.

When the list of paired-associates is prepared, the first word of the pair is used as the stimulus and the second word as the response.

The first members of the pairs (stimulus term) are nonsense syllables (consonant-vowel-consonant), and the second are English nouns (response term).

e.g.: Stimulus = Response

Gen = Loot

Dem= Time

Div= Lamp

The learner is first shown both the stimulus response pairs together and is instructed to remember and recall the response after the presentation of each stimulus term. After that a learning trial begins.

Trials continue until the participant gives all the response words without a single error.

2. Serial learning:

First, lists of verbal items, i.e. nonsense syllables, most familiar or least familiar words, interrelated words etc. are prepared.

In serial learning the participant is presented the entire list and is required to produce the items in the same serial order as in the list.

Learning trials continue until the participant correctly anticipates and recall in the given order.

3. Free Recall:

In this method, participants are presented a list of words, each word is shown at a fixed rate of exposure duration.

Immediately after the presentation of the list, the participants are required to recall the words in any order they can.

This method is used to study how participants organize words for storage in memory.

Studies also indicate that the items placed in the beginning or end of the lists are easier to recall than those placed in the middle which are more difficult to recall.

11. How can you distinguish between generalization and discrimination? (Refer to page no. 61)

12. Why is motivation a prerequisite for learning?

Motivation is considered a pre-requisite and acts as a main facilitator of learning.

It is a mental as well as a physiological state, which arouses an organism to act for fulfilling the current need.

1. Motivation energizes an organism to act rigorously for attaining some goal, and such sets persist until the goal is attained and the need is satisfied.

e.g.: The more motivated you are the harder work you do for learning.

2. Motivation for learning arises from two sources:

Intrinsic motivation: One may learn many things because he/she enjoys them or it provides the means for attaining some other goal.

Extrinsic motivation: Throughout the session one learn to acquire knowledge and skill, which may help to get a good job later.

13. What does the notion of preparedness for learning mean?

Preparedness is a reference to the fact that organisms are better able to associate certain combination of stimuli, responses and reinforces than others.

If an animal eats and is then ill, it may develop an aversion to the flavor of the food, but not to visual or auditory stimuli that works present at the same time.

The members of different species are very different from one another in their capacities and response abilities.

The kinds of S-S or S-R learning an organism can easily acquire depends on the associative mechanism it is genetically endowed with or prepared for.

A particular kind of associative learning is easy for apes or human beings but may be extremely difficult for another species.

It implies that learning very much dependent on those association for which one is genetically prepared at the same time on his/her psychological preparedness to learn a particular task.

14. How can we identify students with learning disabilities?

Learning disability refers to a heterogeneous group of disorders manifested in terms of difficulty in the acquisition of learning, reading, writing, speaking, reasoning, and mathematical activities.

The sources of such disorders are inherent in the child. We can identify students with learning disabilities from many symptoms. These symptoms are following:

- Difficulties in writing letters, words, and phrases, reading out text, and speaking, appear quite frequently, quite often they have listening problems, although they may not have auditory defects. Such children are very different from others in developing learning strategies and plans.
- Learning disabled children have disorders of attention. They get easily distracted and cannot sustain attention on one point for long. Sometimes it leads to hyperactivity ie they are always moving, doing different things and trying to manipulate things without any purpose.
- Poor space orientation and inadequate sense of time are common symptoms. Such children do not get easily oriented to new surroundings and get lost. They lack a sense of time and are late or sometimes too early in their routine work. They also show confusion in direction and misjudge right, left, and down.
- Learning-disabled children have poor motor-coordination and poor manual dexterity. This is evident in their lack of balance. They show Inability to sharpen pencil, handle doorknobs, difficulty in learning to ride a bicycle, etc.
- These children fail to understand and follow oral directions for doing things.
- They misjudge relationships as to which classmates are friendly and which ones are indifferent. They fail to learn and understand body language.
- Learning-disabled children usually show perceptual disorders. These include visual, auditory, tectual and kinesthetic, misperception etc. They fail to differentiate a call-bell from the ring of the telephone. It is not they do not have sensory acuity.They simply fail to use it in performance.
- Fairly large number of learning-disabled children have dyslexia. They quite often fail to copy letter and words, e.g,: they fail to distinguish between b and d, p and q, p and I, was and saw, unclear and nuclear etc., they fail to organize verbal material.

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UNIT IV

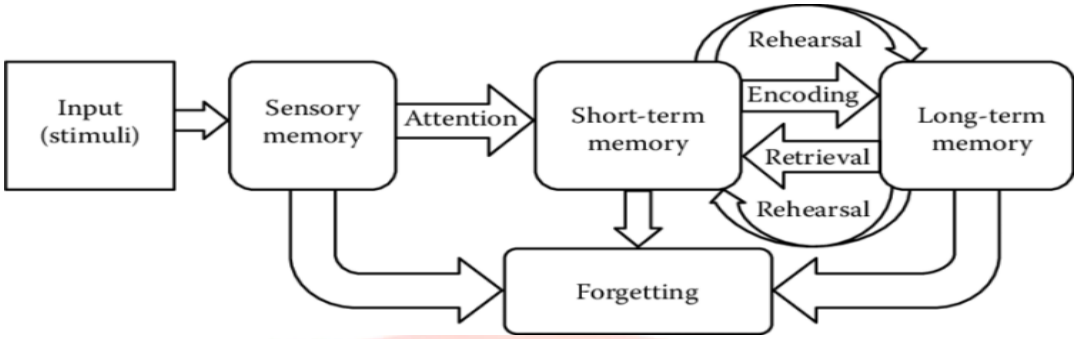
UNIT IV	Memory and Forgetting: Stages of Memory: Encoding, Storage and Retrieval; Types of Memory: Sensory, Short Term and Long Term Memory (Basic Introduction); Forgetting: Interference and Cue- Dependent Forgetting.

Human memory, like memory in a computer, allows us to store information for later use. In order to do this, however, both the computer and we need to master three processes involved in memory. The first is called encoding; the process we use to transform information so that it can be stored. For a computer, this means transferring data into 1's and 0's. For us, it means transforming the data into a meaningful form such as an association with an existing memory, an image, or a sound.

Psychologists consider memory and learning to be different processes, though, both are closely related. Whereas, learning refers to the acquisition of new behaviors through experience, memory refers to the process of storing of information that can be retrieved when required. In this lesson you will learn about memory and forgetting. You can very easily understand the significance of memory by visualizing a situation about a person who has lost his memory. He/she will lose identity and cannot connect various experiences, events, and people. The person will lead a miserable life. This happens in brain damaged people or in old age when people develop some kind of memory loss, as in Alzheimer's disease. Memory refers to the set of processes involved in storing information and the specific process is termed as retention. Cognitive psychologists define memory as a perceptually active mental system that receives, enodes, modifies, and retrieves information. We can not directly observe the process of memory. It can be studied indirectly by way of measuring retention. Three basic methods of measuring retention are : Recall, Recognition, and Relearning. Let us briefly discuss these three methods of measuring retention. Recognition, Recall and Relearning When you are not able to remember someone's name but you know that you have seen his/her face before, this is the process of recognition. In this process you are checking the stimulus (face) with your memory content to find out the match. In the same manner when one tries to remember a name without a face in front, it is called as recall. Recall is a process of using a general stimulus and finding the information that is in the memory. When you are given a question in essay you use the process of recall. When you answer multiple choice items, you are asked to match the information with the provided pieces of information. You have to identify and match it with the information which is already stored in your memory. Recognition is more successful because it is easy. Relearning is the method of learning the material second time. It usually takes less time than original learning.

Stages of Memory Through research psychologists have discovered that memory is not a single system, it has more than one distinct system. In other words, there are more than one type of memory. According to the most acceptable model of memory, there are three major systems of memory : The Sensory Memory; Short-term memory(STM), and Long-Term Memory (LTM). Information moves successively through these three systems, if attention is given to the material. If attention (focused awareness) is not given, information does not move further into the system.

Nature of three systems of memory



Sensory Memory: Hold any object about 12 inches in front of you. Look at it steadily for a while. Close your eyes and notice how long the clear image of that object lasts? A clear visual image of any object will last in sensory memory for about half a second after the stimulus is no longer received by the receptors. Sensory memory holds representations of sensory input for brief periods of time, depending upon the modality involved. There are different sensory registers for each of the senses. The visual register is called iconic memory and auditory register, echoic memory. The iconic memory lasts about half a second and the echoic memory lasts several seconds. Most of the information that enters our sensory registers is lost because we do not attend to all that is registered, whatever we attend to moves on to the next stage of memory.

Visual sensory memory is known as **iconic memory**. Iconic memory was first studied by the psychologist George Sperling (1960). In his research, Sperling showed participants a display of letters in rows, "Measuring Iconic Memory." However, the display lasted only about 50 milliseconds (1/20 of a second). Then, Sperling gave his participants a recall test in which they were asked to name all the letters that they could remember. On average, the participants could remember only about one-quarter of the letters that they had seen.

Measuring Iconic Memory. Sperling showed his participants displays such as this one for only 1/20th of a second. He found that when he cued the participants to report one of the three rows of letters, they could do it, even if the cue was given shortly after the display had been removed. The research demonstrated the existence of iconic memory.

U	G	J	X
P	J	M	B
F	C	A	L

Sperling reasoned that the participants had seen all the letters but could remember them only very briefly, making it impossible for them to report them all. To test this idea, in his next experiment, he first showed the same letters, but then after the display had been removed, he signaled to the participants to report the letters from either the first, second, or third row. In this condition, the participants now reported almost all the letters in that row. This finding confirmed Sperling's hunch: participants had access to all of the letters in their iconic memories, and if the task was short enough, they were able to report on the part of the display he asked them to. The "short enough" is the length of iconic memory, which turns out to be about 250 milliseconds (¼ of a second).

Auditory sensory memory is known as **echoic memory**. In contrast to iconic memories, which decay very rapidly, echoic memories can last as long as four seconds (Cowan, Lichty, & Grove,

1990). This is convenient as it allows you — among other things — to remember the words that you said at the beginning of a long sentence when you get to the end of it, and to take notes on your psychology professor's most recent statement even after he or she has finished saying it.

In some people iconic memory seems to last longer, a phenomenon known as **eidetic imagery** (or *photographic memory*) in which *people can report details of an image over long periods of time*. These people, who often suffer from psychological disorders such as autism, claim that they can "see" an image long after it has been presented, and can often report accurately on that image. There is also some evidence for eidetic memories in hearing; some people report that their echoic memories persist for unusually long periods of time. The composer Wolfgang Amadeus Mozart may have possessed eidetic memory for music, because even when he was very young and had not yet had a great deal of musical training, he could listen to long compositions and then play them back almost perfectly (Solomon, 1995).

Short-Term Memory (STM): Look up from this book for a moment and note what attracts your visual attention? Try to identify the sounds and sensation that you are experiencing now. What you have identified is the content of your short term memory. A second type of memory is known as short-term memory or STM. It holds relatively small amounts of information for brief periods of time, usually 30 seconds or less. This is the memory system we use when we look up at the phone number and dial it. If we are connected on the first instance the telephone number is forgotten. However, if we get the line engaged for some time, we keep on dialing the number and through repeated dialing rehearsal of the telephone number pushes it to the long-term memory (LTM) storage.

However, it has been established now that short-term storage is more than a passive "holding area" (e.g. holding a telephone number). On the contrary, it involves active processing of information. This finding has led the psychologists now to use the term working memory. It means that something active goes on during the short-term memory stage, e.g., simple computations.

Most of the information that gets into sensory memory is forgotten, but information that we turn our attention to, with the goal of remembering it, may pass into *short-term memory*. **Short-term memory (STM)** is *the place where small amounts of information can be temporarily kept for more than a few seconds but usually for less than one minute* (Baddeley, Vallar, & Shallice, 1990). Information in short-term memory is not stored permanently but rather becomes available for us to process, and *the processes that we use to make sense of, modify, interpret, and store information in STM* are known as **working memory**.

Although it is called memory, working memory is not a store of memory like STM but rather a set of memory procedures or operations. Imagine, for instance, that you are asked to participate in a task such as this one, which is a measure of working memory (Unsworth & Engle, 2007). Each of the following questions appears individually on a computer screen and then disappears after you answer the question:

Is 10 × 2 − 5 = 15? (Answer YES OR NO) Then remember "S"
Is 12 ÷ 6 − 2 = 1? (Answer YES OR NO) Then remember "R"
Is 10 × 2 = 5? (Answer YES OR NO) Then remember "P"
Is 8 ÷ 2 − 1 = 1? (Answer YES OR NO) Then remember "T"
Is 6 × 2 − 1 = 8? (Answer YES OR NO) Then remember "U"
Is 2 × 3 − 3 = 0? (Answer YES OR NO) Then remember "Q"

To successfully accomplish the task, you have to answer each of the math problems correctly and at the same time remember the letter that follows the task. Then, after the six questions, you must list the letters that appeared in each of the trials in the correct order (in this case S, R, P, T, U, Q).

To accomplish this difficult task you need to use a variety of skills. You clearly need to use STM, as you must keep the letters in storage until you are asked to list them. But you also need a way to make the best use of your available attention and processing. For instance, you might decide to use a strategy of repeat the letters twice, then quickly solve the next problem, and then repeat the letters twice again including the new one. Keeping this strategy (or others like it) going is the role of working memory's central executive — the part of working memory that directs attention and processing. The central executive will make use of whatever strategies seem to be best for the given task. For instance, the central executive will direct the rehearsal process, and at the same time direct the visual cortex to form an image of the list of letters in memory. You can see that although STM is involved, the processes that we use to operate on the material in memory are also critical.

Short-term memory is limited in both the length and the amount of information it can hold. Peterson and Peterson (1959) found that when people were asked to remember a list of three-letter strings and then were immediately asked to perform a distracting task (counting backward by threes), the material was quickly forgotten (Figure, "STM Decay"), such that by 18 seconds it was virtually gone.

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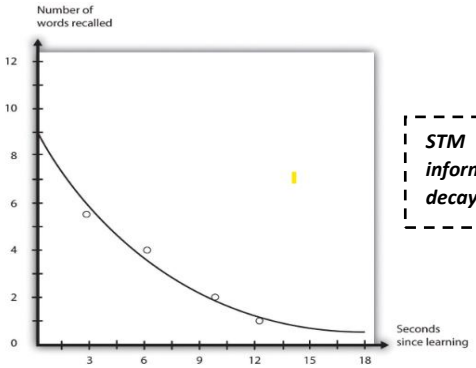


STM Decay. Researchers found that information that was not rehearsed decayed quickly from memory.

One way to prevent the decay of information from short-term memory is to use working

memory to rehearse it. Maintenance rehearsal is the process of repeating information mentally or out loud with the goal of keeping it in memory. We engage in maintenance rehearsal to keep something that we want to remember (e.g., a person's name, email address, or phone number) in mind long enough to write it down, use it, or potentially transfer it to long-term memory.

If we continue to rehearse information, it will stay in STM until we stop rehearsing it, but there is also a capacity limit to STM. Try reading each of the following rows of numbers, one row at a time, at a rate of about one number each second. Then when you have finished each row, close your eyes and write down as many of the numbers as you can remember.

If you are like the average person, you will have found that on this test of working memory, known as a digit span test, you did pretty well up to about the fourth line, and then you started having trouble. I bet you missed some of the numbers in the last three rows, and did pretty poorly on the last one.

The digit span of most adults is between five and nine digits, with an average of about seven. The cognitive psychologist George Miller (1956) referred to "seven plus or minus two" pieces of information as the magic number in short-term memory. But if we can only hold a maximum of about nine digits in short-term memory, then how can we remember larger amounts of information than this? For instance, how can we ever remember a 10-digit phone number long enough to dial it?

One way we are able to expand our ability to remember things in STM is by using a memory technique called chunking. Chunking is the process of organizing information into smaller groupings (chunks), thereby increasing the number of items that can be held in STM. For instance, try to remember this string of 12 letters:

XOFCBANNCVTM

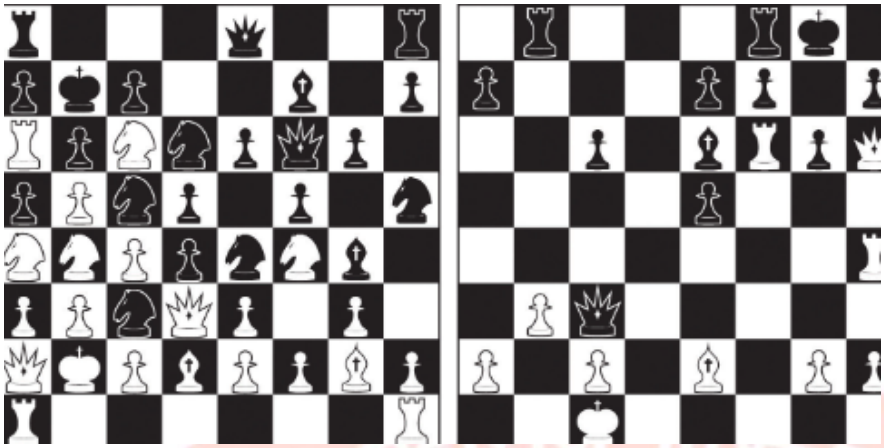
You probably won't do that well because the number of letters is more than the magic number of seven.

Now try again with this one:

CTVCBCTSNHBO

Would it help you if I pointed out that the material in this string could be chunked into four sets of three letters each? I think it would, because then rather than remembering 12 letters, you would only have to remember the names of four television stations. In this case, chunking changes the number of items you have to remember from 12 to only four.

Experts rely on chunking to help them process complex information. Herbert Simon and William Chase (1973) showed chess masters and chess novices various positions of pieces on a chessboard for a few seconds each. The experts did a lot better than the novices in remembering the positions because they were able to see the "big picture." They didn't have to remember the position of each of the pieces individually, but chunked the pieces into several larger layouts. But when the researchers showed both groups random chess positions — positions that would be very unlikely to occur in real games — both groups did equally poorly, because in this situation the experts lost their ability to organize the layouts, ("Possible and Impossible Chess Positions"). The same occurs for basketball. Basketball players recall actual basketball positions much better than do nonplayers, but only when the positions make sense in terms of what is happening on the court, or what is likely to happen in the near future, and thus can be chunked into bigger units (Didierjean & Marmèche, 2005).



Possible and Impossible Chess Positions. Experience matters: Experienced chess players are able to recall the positions of the game on the right much better than are those who are chess novices. But the experts do no better than the novices in remembering the positions on the left, which cannot occur in a

If information makes it past short term-memory it may enter long-term memory (LTM), memory storage that can hold information for days, months, and years. The capacity of long-term memory is large, and there is no known limit to what we can remember (Wang, Liu, & Wang, 2003). Although we may forget at least some information after we learn it, other things will stay with us forever. In the next section we will discuss the principles of long-term memory

Long - Term Memory (LTM) : It is a memory system for the retention of large amounts of information for long periods of time. It is the memory system that permits us to remember events that happened many years ago, yesterday, last year, and so on. It is the long term memory that allows you to remember factual information that makes it possible for us to learn different subjects, appear in the examinations and perform communication with others etc. It brings continuity and meaning in our life.

When we pay attention to an information and engage in active rehearsal the material is stored in the long term memory (LTM). Information in the sensory memory enters short term memory when it becomes the focus of our attention. If we do not pay attention to the incoming sensory information, the material fades and quickly disappears. We tend to pay attention to certain information and not to the other. Paying attention to certain

aspects of our world is what we call. " selective attention". The information from STM is often rehearsed by us. This rehearsal helps the transfer of that information from STM to LTM.

Explicit Memory- When we assess memory by asking a person to consciously remember things, we are measuring *explicit memory*. It is also known as ***declarative memory***. **Explicit memory** refers to *knowledge or experiences that can be consciously remembered*.

"Types of Memory," there are two types of explicit memory: *episodic* and *semantic*.

Episodic memory refers to *the firsthand experiences that we have had* (e.g., recollections of our high school graduation day or of the fantastic dinner we had in New York last year).

Semantic memory refers to *our knowledge of facts and concepts about the world (e.g., that the absolute value of −90 is greater than the absolute value of 9 and that one definition of the word "affect" is "the experience of feeling or emotion").*

Explicit memory is assessed using measures in which the individual being tested must consciously attempt to remember the information. A **recall memory** test is *a measure of explicit memory that involves bringing from memory information that has previously been remembered*. We rely on our recall memory when we take an essay test, because the test requires us to generate previously remembered information. A multiple-choice test is an example of a **recognition memory test**, *a measure of explicit memory that involves*

determining whether information has been seen or learned before.

Implicit Memory

While explicit memory consists of the things that we can consciously report that we know, implicit memory refers to knowledge that we cannot consciously access. However, implicit memory is nevertheless exceedingly important to us because it has a direct effect on our behavior. **Implicit memory** refers to *the influence of experience on behavior, even if the individual is not aware of those influences*.

"Types of Memory," there are three general types of implicit memory: procedural memory, classical conditioning effects, and priming.

Procedural memory refers to *our often unexplainable knowledge of how to do things*. When we walk from one place to another, speak to another person in English, dial a cell phone, or play a video game, we are using procedural memory. Procedural memory allows us to perform complex tasks, even though we may not be able to explain to others how we do them. There is no way to tell someone how to ride a bicycle; a person has to learn by doing it. The idea of implicit memory helps explain how infants are able to learn. The ability to crawl, walk, and talk are procedures, and these skills are easily and efficiently developed while we are children despite the fact that as adults we have no conscious memory of having learned them.

A second type of implicit memory is **classical conditioning effects**, in which *we learn, often without effort or awareness, to associate neutral stimuli (such as a sound or a light) with another stimulus (such as food), which creates a naturally occurring response, such as enjoyment or salivation*. The memory for the association is demonstrated when the conditioned stimulus (the sound) begins to create the same response as the unconditioned stimulus (the food) did before the learning.

The final type of implicit memory is known as priming, or *changes in behavior as a result of experiences that have happened frequently or recently*. Priming refers both to the activation of knowledge (e.g., we can prime the concept of kindness by presenting people with words related to kindness) and to the influence of that activation on behavior (people who are primed with the concept of kindness may act more kindly).

One measure of the influence of priming on implicit memory is the word fragment test, in which a person is asked to fill in missing letters to make words. You can try this yourself: First, try to complete the following word fragments, but work on each one for only three or four seconds. Do any words pop into mind quickly?

_ i b _ a _ y

_ h _ s _ _ i _ n

_ o _ k

_ h _ i s _

Now read the following sentence carefully:

"He got his materials from the shelves, checked them out, and then left the building."

Then try again to make words out of the word fragments.

I think you might find that it is easier to complete fragments 1 and 3 as "library" and "book," respectively, after you read the sentence than it was before you read it. However, reading the sentence didn't really help you to complete fragments 2 and 4 as "physician" and "chaise." This difference in implicit memory probably occurred because as you read the sentence, the concept of "library" (and perhaps "book") was primed, even though they were never mentioned explicitly. Once a concept is primed it influences our behaviors, for instance, on word fragment tests.

Our everyday behaviors are influenced by priming in a wide variety of situations. Seeing an advertisement for cigarettes may make us start smoking, seeing the flag of our home country may arouse our patriotism, and seeing a student from a rival school may arouse our competitive spirit. And these influences on our behaviors may occur without our being aware of them.

As we have seen, our memories are not perfect. They fail in part due to our inadequate encoding and storage, and in part due to our inability to accurately retrieve stored information. But memory is also influenced by the setting in which it occurs, by the events that occur to us after we have experienced an event, and by the cognitive processes that we use to help us remember. Although our cognition allows us to attend to, rehearse, and organize information, cognition may also lead to distortions and errors in our judgments and our behaviors.

Cognitive biases that are known to influence humans. **Cognitive biases** are *errors in memory or judgment that are caused by the inappropriate use of cognitive processes* . The study of cognitive biases is important both because it relates to the important psychological theme of accuracy versus inaccuracy in perception, and because being aware of the types of errors that we may make can help us avoid them and therefore improve our decision-making skills.

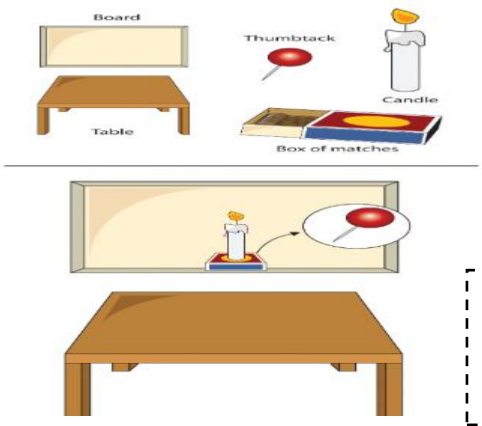
One potential error in memory involves mistakes in differentiating the sources of information. **Source monitoring** refers to *the ability to accurately identify the source of a memory*. Perhaps you've had the experience of wondering whether you really experienced an event or only dreamed or imagined it. If so, you wouldn't be alone. Rassin, Merkelbach, and Spaan (2001) reported that up to 25% of undergraduate students reported being confused about real versus dreamed events. Studies suggest that people who are fantasy-prone are more likely to experience source monitoring errors (Winograd, Peluso, & Glover, 1998), and such errors also occur more often for both children and the elderly than for adolescents and younger adults (Jacoby & Rhodes, 2006).

In other cases we may be sure that we remembered the information from real life but be uncertain about exactly where we heard it. Imagine that you read a news story in a tabloid magazine such as *HELLO! Canada*. Probably you would have discounted the information because you know that its source is unreliable. But what if later you were to remember the story but forget the source of the information? If this happens, you might become convinced that the news story is true because you forget to discount it. The **sleeper effect** refers to *attitude change that occurs over time when we forget the source of information* (Pratkanis, Greenwald, Leippe, & Baumgardner, 1988).

SCHEMATIC PROCESSING: DISTORTIONS BASED ON EXPECTATIONS

We have seen that schemas help us remember information by organizing material into coherent representations. However, although schemas can improve our memories, they may also lead to cognitive biases. Using schemas may lead us to falsely remember things that never happened to us and to distort or misremember things that did. For one, schemas lead to the **confirmation bias**, which is *the tendency to verify and confirm our existing memories rather than to challenge and disconfirm them*. The confirmation bias occurs because once we have schemas, they influence how we seek out and interpret new information. The confirmation bias leads us to remember information that fits our schemas better than we remember information that disconfirms them (Stangor & McMillan, 1992), a process that makes our stereotypes very difficult to change. And we ask questions in ways that confirm our schemas (Trope & Thompson, 1997). If we think that a person is an extrovert, we might ask her about ways that she likes to have fun, thereby making it more likely that we will confirm our beliefs. In short, once we begin to believe in something — for instance, a stereotype about a group of people — it becomes very difficult to later convince us that these beliefs are not true; the beliefs become self-confirming. Darley and Gross (1983) demonstrated how schemas about social class could influence memory. In their research they gave participants a picture and some information about a Grade 4 girl named Hannah. To activate a schema about her social class, Hannah was pictured sitting in front of a nice suburban house for one-half of the participants and pictured in front of an impoverished house in an urban area for the other half. Then the participants watched a video that showed Hannah taking an intelligence test. As the test went on, Hannah got some of the questions right and some of them wrong, but the number of correct and incorrect answers was the same in both conditions. Then the participants were asked to remember how many questions Hannah got right and wrong. Demonstrating that stereotypes had influenced memory, the participants who thought that Hannah had come from an upper-class background remembered that she had gotten more correct answers than those who thought she was from a lower-class background.

Functional fixedness occurs when *people's schemas prevent them from using an object in new and nontraditional ways*. Duncker (1945) gave participants a candle, a box of thumbtacks, and a book of matches, and asked them to attach the candle to the wall so that it did not drip onto the table below (Figur, "Functional Fixedness"). Few of the participants realized that the box could be tacked to the wall and used as a platform to hold the candle. The problem again is that our existing memories are powerful, and they bias the way we think about new information. Because the participants were "fixated" on the box's normal function of holding thumbtacks, they could not see its alternative use.



Functional Fixedness. In the candle-tack-box problem, functional fixedness may lead us to see the box only as a box and not as a potential candleholder.

Memory and Construction

Memory is not-like a tape recorder in which information are contained and retrieved when desired. It has been found that when we encode information, or store it or retrieve it we are actively involved. Our past experiences and their memories also influence. As a result, our memories of events, films, discussions and stories etc. often become a constructive and reconstructive process. You will realize that when people talk about certain events their version often differ. In fact, people often add, subtract or intensify the material that was experienced. This often happens. Thus, our memories are receptible to change.

Imagery and Memory

An image is a mental representation of some object or event experienced by a person. For instance, when we use the word "table" or "tree" we have access to the word as well as an objective representation in mind. We can use the image to prepare the figure of the object represented. You will find that some words like "love", "freedom", and "democracy" do not have any definite concrete way of representation. It has been found that a concept which can be represented through images is retained better than those concepts which do not have any concrete representation. This finding has important implications for memorizing. If you want to memorize a list or some others material try to connect with an image. Any kind of image, if connected with the list facilitates in retaining the list.

FORGETTING

Sometimes we are unable to remember information that we need at a particular time, perhaps, we have lost the information. We find that on some occasions this lets us down, we are unable to remember the information that we require desperately. During examinations we are unable to remember or retrieve what we had learned. Why does this occur? This is what we call forgetting. Many explanations have been offered to explain this phenomenon decay. Let us briefly consider some explanations to explain the causes of forgetting.

(i) Decay: Some psychologists think that it is due to fading of memory traces or decay that happens with lapse of time. This does not explain why certain memories fade forever while other seem to be well preserved. Passing of time cannot, therefore, be considered as the cause of forgetting.

(ii) Interference: A more useful explanation is found in the view called interference theory. It argues that memories are not lost so much because of decay as they are because of what happens to them during the period when we retain them. Thus, inhibition or interference by subsequent learned material. There are two types of such interferences - Retroactive interference and Proactive interference. Retroactive interference (acting backwards) occurs, when the current information interferes with what has been retained earlier. For example, you learn Punjabi language on Monday and Bengali on Tuesday. During a Punjabi test taken on Wednesday interference is expected from the learners of Bengali words. Forgetting may occur due to (acting forwards) proactive interference. This is a situation in which earlier information in the memory interferes with the current information. Suppose you have been driving a scooter with gears. Now, you have a new scooter which has no gears (automatic drive). You will tend

to change the gears in the new scooter and this habit can persist for long. Proactive interference thus explains one's inability to acquire new knowledge or habit because of the powerful interference from old habits.

(iii) Motivated Forgetting: Freud considered that why we forget is often motivated. Unpleasant, painful, or threatening situations are forgotten or what Freud called repressed (a defense mechanism). We tend to forget what is unpleasant to us.

(iv) Stimulus Encoding: Recent studies indicate that the way we encode an information and its context play important role in remembering. Our experiences are located in a situation and are encoded in certain form. If the conditions during retrieval are similar to encoding the memory remains intact.

(v) Level of Processing: While learning some material we may attend to it in detail and process at a deeper level or neglect it and attend at a surface level. This may be a cause of forgetting.

(vi) Cue-dependent forgetting, or retrieval failure, is the failure to recall a memory due to missing stimuli or cues that were present at the time the memory was encoded. It is one of five cognitive psychology theories of forgetting. It states that a memory is sometimes temporarily forgotten purely because it cannot be retrieved, but the proper cue can bring it to mind. A good metaphor for this is searching for a book in a library without the reference number, title, author or even subject. The information still exists, but without these cues retrieval is unlikely. Furthermore, a good retrieval cue must be consistent with the original encoding of the information. If the sound of the word is emphasized during the encoding process, the cue that should be used should also put emphasis on the phonetic quality of the word (Psychology Themes and variations, pg 282).

REPRESSION: FORGETTING PAINFUL EVENTS

The events and experiences that are threatening or painful are eliminated from our consciousness. This is called repression. Freud believed that repressed memories are pushed into hidden recesses of the unconscious mind, where they remain. Such repressed memories may cause many psychological problems for the individual. Amnesia refers to a loss of memory stemming from illness, injury, drug abuse or other causes .

Two types of Amnesia are worth noting: **Korsakoff's syndrome, and Alzheimer's disease.**

(i)Korsakoff's syndrome: This is an illness caused by long-term abuse of alcohol. It often involves profound retrograde amnesia. That is, patient cannot remember events that took place many years before the onset of their illness. Careful medical examinations of such person's brains after their death indicate that they have experienced extensive damage to portions of the the thalamus and hypothalamus, portions that play key role in long-term memory.

(ii)Alzheimer's Disease: This illness occurs in 5 percent of all people over age sixty-five. It begins with mild problems, such as increased difficulty in remembering names, phone numbers, or appointments. Gradually, patients condition worsens until they become totally confused are unable to perform simple tasks like dressing, and experience an almost total loss of memory. In the later stages the patients fail to recognize their spouses and children. Patients lose their past and this is very disturbing to them.

Very Short Questions/True Facts (One Sentence):

1. **Chunking:** organizing information into manageable bits or chunks
2. **Elaborative Rehearsal:** thinking about the meaning of the new information and its relation to knowledge already stored in your memory
3. **Levels Of Processing:** information that is thought of more deeply becomes more meaningful and thus better committed to memory
4. **Memory-Enhancing Strategy:** technique to help make sure information goes from short-term memory to long-term memory
5. **Mnemonic Device:** memory aids that help organize information for encoding
6. Three processes involved in memory-The three processes involved in memory are encoding, storage, and retrieval.
7. **Why does chunking allow people to keep more information in short-term memory?**-Short-term memory has a limited capacity of about seven plus or minus two pieces of information. Chunking allows people to combine many small pieces of information into fewer, bigger pieces of information. As long as people have fewer than about nine chunks of information, they will probably be able to hold that information in short-term memory.
8. **What kinds of retrieval cues are used to get information out of memory?**-Retrieval cues that can be used to get information out of memory are associations, context, and mood.
9. **What are three ways of measuring forgetting and retention?**-Forgetting and retention can be measured by recall, recognition, and relearning.
10. **Define "retroactive interference" and give an example.**-Retroactive interference is the forgetting of old information when new information is learned. An example: Frank learned Spanish in high school. Since he took French 101 in college, however, he can't remember very much of his Spanish.

Short Questions (100-120 words)

1. **Define Memory.**
   Memory is the faculty of the brain by which data or information is encoded, stored, and retrieved when needed. It is the retention of information over time for the purpose of influencing future action.
2. **What is forgetting?**
   Forgetting or disremembering is the apparent loss or modification of information already encoded and stored in an individual's long-term memory. It is a spontaneous or gradual process in which old memories are unable to be recalled from memory storage.
3. **Write any two causes of forgetting**.
   Lapse of Time: With the passage of time what is learned or experienced is forgotten. This is a passive decay. The memory traces formed in the brain gets faded and becomes weather with the passage of time.
   Interference: One type of learning interface with the learning of another type is called theory of interference.
4. **Explain Types of Memory.**
   Sensory Memory: Sensory memory holds representations of sensory input for brief periods of time, depending upon the modality involved. There are different sensory registers for each of the senses. The visual register is called iconic memory and auditory register, echoic memory. The iconic memory lasts about half a second and the echoic memory lasts several seconds.

Short-Term Memory (STM): STM is the place where small amounts of information can be temporarily kept for more than a few seconds but usually for less than one minute (Baddeley, Vallar, & Shallice, 1990). Information in short-term memory is not stored permanently but rather becomes available for us to process, and the processes that we use to make sense of, modify, interpret, and store information in STM are known as working memory.

Long - Term Memory (LTM) : It is a memory system for the retention of large amounts of information for long periods of time. It is the memory system that permits us to remember events that happened many years ago, yesterday, last year, and so on. It is the long term memory that allows you to remember factual information that makes it possible for us to learn different subjects, appear in the examinations and perform communication with others etc. It brings continuity and meaning in our life.

5. Explain the method of loci.

It is an imaging technique where a person memorizes the layout of a building or some environment, they are familiar with, and information that is needed to be remembered is arranged throughout the environment. The person trying to recall the information then uses this spatial map they have created to mentally walk through the environment to encounter each piece of information along the way.

6. What is the process by which we get information into our brains?

Psychologists describe the human memory system as being information-processing models that compare human memory to computer operation systems. Therefore, using this analogy, in order for information to initially be processed into our brains, it must undergo the process known as encoding. This allows for information to be "coded" into our brains.

Much evidence has been uncovered for psychologists to suggest there being three ways to learning: recall, recognition, and relearning. These three forms of learning feedback into the persisted learning that makes up memory and together make up a way to measure retention (a process known as storage). Therefore, these other options would be incorrect as they focus on another part of memory.

7. What is the difference between iconic memory and echoic memory?

Iconic and echoic memories are both types of very short-term sensory memories. Remember that iconic memory is visual and echoic memory is auditory; you can see an icon and hear an echo.

As for the answer choice about memory consolidation, consolidation is the process through which a memory becomes stable in the brain and does not have to do with iconic or echoic memories.

8. In a psychology lab experiment, the subject has to memorize long lists of words, do fifteen basic math problems, and then get tested on the lists of words. What process were the experimenters getting the subjects not to do by including the math problems in between the memorization and the recall?

By including math problems in between memorization and recall, the experimenters were trying to avoid rehearsal-- the internal repetition of items to extend short term memory. As for the other answers, chunking is clustering smaller items into larger groups to aid in memory, blocking is the failure to remember something even though it's in the memory, reconsolidation is changes in the memory that can occur when a memory is recalled, and flashbulb memories are vivid memories of shocking events.

9. How does shallow processing affect encoding?

There are different levels of processing, such as shallow processing and deep processing. The first refers to processing information at a shallow, or basic, level. This would entail encoding a word's letters or maybe even how a word sounds. Deep processing entails semantic encoding. This means encoding based on the meaning of a word. This more complex level of encoding allows for better retention.

10. Which form of learning does a multiple-choice test engage?

Memory is learning that has persisted over time, allowing information to be stored and retrieved. Much research has been undertaken to allow psychologists to outline three types of learning that aid in memory formation: recall, recognition and relearning. These three processes feedback and provide psychologists with a way to measure retention (storage) of information that has been encoded into the brain.

Long/Extensive Questions (3 to 5 Pages)

1. **Define Memory. Explain its types. (Refer to page no. 75-81)**
2. **What is forgetting? Explain its different causes. (Refer to page no. 84, and 85)**
3. **What is the meaning of the terms 'encoding', 'storage' and 'retrieval'?**

•Encoding refers to the process of transforming a physical, sensory input such as sights, sounds, or smells into a kind of representation that can be placed into memory. This may involve various types of encoding, such as visual, auditory, or semantic encoding.

• Storage refers to the retaining or maintaining the encoded information over time. Information can be stored in either short-term or long-term memory, depending on how it's processed and for how long it will be needed. Short-term memory holds limited information for a short period, while long-term memory can store immense amounts of information for extended durations, sometimes even for a lifetime.

• Retrieval refers to accessing stored information when needed. Retrieval can be done in various ways, such as recalling, recognizing, or performing learned skills. Successful retrieval is dependent upon how well the information was encoded and stored.

Before information can be stored in memory, it first needs to be encoded for storage. Even if the information is held in our short-term memory, it is not always transferred to our long-term memory. So in order to remember events and facts over a long period of time, we need to encode and subsequently transfer them from short-term to long-term storage.

4. **How is information processed through sensory, short-term and long-term memory systems?**

Atkinson and Shiffrin model of memory also known as stage model of memory.

This proposes the existence of three separate but sequentially linked memory systems, the sensory memory, the short-term memory and the long-term memory.

The Sensory Memory—contains a fleeting impression of a sensory stimulus (a sight or a sound). It is initial process that preserve brief impression of stimuli. It has a large capacity. It is of very short duration that is less than a second.

The Short-Term Memory—a limited recollection of recently perceived stimuli (a telephone number or an order of drinks). It holds small amount of information for a brief period of time i.e. less than 30 seconds. It is primarily encoded acoustically.

The Long-Term Memory—a more or less permanent store of memories for later retrieval (e.g. our telephone numbers). In this stage information's are encoded semantically and storage capacity is unlimited.

Each of these memory systems is seen as differing in the way they process information,

how much information they can hold and for how long they can hold that information.

5.How are maintenance rehearsals different from elaborative rehearsals?

Maintenance rehearsals:

- It is an important control process of STM.
- It is used to retain the information for as much time as required.
- As the name suggests these kinds of rehearsals simply maintain information through repetition and when such repetitions discontinue the information is lost.
- It is carried through silent or vocal repetition.

Elaborative rehearsals:

- From the STM information enters the long term memory through elaborative rehearsals.
- This rehearsal attempts to connect the "to be retained information" to the already existing information in long term memory.
- e.g. the task of remembering the meaning of the work "humanity" will be easier if the meaning of concepts such as "compassion", "truth" and "benevolence" are already in place.
- In elaborate rehearsals, one attempts to analyse the information in terms of various information it arouses.
- Assignment of meaning and associations are formed. –
- It involves organization of the incoming information in as many ways as possible e.g. we can expand the information in some kind of logical framework, link it to similar memories or else create a mental image.

6. Why does forgetting take place?

Each one of us has experienced forgetting and its consequences almost routinely. There are some reasons because of which we forget:

1. It is because the information we commit to our long-term memory is somehow lost.
2. It is because we did not memorize it well enough.
3. It is because we did not encode the information correctly or it is because during storage, it got distorted or misplaced.

There are theories which have been developed to explain forgetting:

1. Theory of forgetting developed by Hermann Ebbinghaus:

According to him the rate of forgetting is maximum in the first nine hours, particularly during the first hour. After that, the rate slows down and not much is forgotten even after many days.

2. Forgetting due to Trace decay:

(a)Trace theory (also called disuse theory) is the earliest theory of forgetting.

(b)The assumption here is that memory leads to modification in the central nervous system, which is akin to physical changes in the brain called "memory traces". When these memory traces are not used for a long time, they simply fade away and become unavailable.

Drawbacks:

If forgetting takes place because memory traces decay due to disuse, then people who go to sleep after memorizing should forget more compared to those who remain awake.

Those who remain awake after memorizing show greater forgetting than those, who sleep.

3. Forgetting due to interference:

The interference theory suggests that forgetting is due to interferences between various

information's that the memory store contains.

Interference comes about at a time of retrieval when these various sets of associations compete with each other for retrieval.

There are two kinds of interferences that may result in forgetting.

(a) Proactive (forward moving): Proactive means what you have learnt earlier interferes with the recall of your subsequent learning. In other words, in proactive interference past learning interferes with the recall of later learning, e.g. If you know English and you find it difficult to learn French it is because of proactive interference.

(b) Retroactive (backward moving): Retroactive refers to difficulty in recalling what you have learnt earlier because of learning a new material. In retroactive interference the later learning interferes with the recall of past learning.e.g. If you cannot recall English equivalents of French words that you are currently memorizing then it is because of retroactive interference.

7. What evidence do we have to say that 'memory is a constructive process'?

Bartlett" saw memory as a constructive and not a reproductive process.

1. He used the method of "serial reproduction" in which the participants of his experiments recalled the memory materials reportedly at varying time intervals.

While engaging in this method of learning material, his participants committed a wide variety of errors which Bartlett considered useful in understanding the process of memory construction.

2. Using meaningful materials such as texts, folk tales, fables etc.

He attempted to understand the manner in which content of any specific memory gets affects by a person's knowledge, goals, motivation, preferences and various other psychological process.

3. Schemas play an important role in the process of memorization. Schemas refer to an organization of past experiences and knowledge which influence the way in which incoming information is interpreted, stored and later retrieved.

Memory, therefore becomes encoded and is stored in terms of a person's understanding and within his/her previous knowledge and expectations.

8.Differentiate between declarative and procedural memories. (Refer to page no. 80, and 81)

9.Explain Mnemonic devices to improve memory.

How good is your memory? We all would like to improve our memories so that we can retain more facts and information. This is possible with little effort and almost anyone can improve his or her memory. Here are some tips to enhance one's memory. Mnemonic techniques are ways to help you memorize a phrase or idea with patterns. Mnemonic techniques can include songs, poems, rhymes, outlines, images and acronyms. Mnemonics give meaning to something ordinary to make it more memorable when you try to recall it. This technique is useful for storing information in both your short- and long-term memory. Mnemonic devices to improve memory Mnemonics (the initial "m" is silent) are clues of any kind that help us remember something, usually by causing us to associate the information we want to remember with a visual image, a sentence, or a word. Common types of mnemonic devices include:

1. Visual images- a microphone to remember the name "Mike," a rose for "Rosie." Use positive, pleasant images, because the brain often blocks out unpleasant ones, and make them vivid, colorful, and three-dimensional — they'll be easier to remember.

2. Sentences in which the first letter of each word is part of or represents the initial of what you want to remember. Millions of musicians, for example, first memorized the lines of the treble staff with the sentence "Every good boy does fine" (or "deserves favor"), representing the notes E, G, B, D, and F. Medical students often learn groups of nerves,

bones, and other anatomical features using nonsense sentences.

3. Acronyms, which are initials that creates pronounceable words. The spaces between the lines on the treble staff, for example, are F, A, C, and E: FACE.

4. Rhymes and alliteration: remember learning "30 days hath September, April, June, and November"? A hefty guy named Robert can be remembered as "Big Bob" and a smiley co-worker as "Perky Pat" (though it might be best to keep such names to yourself).

5. Jokes or even off-color associations using facts, figures, and names you need to recall, because funny or peculiar things are easier to remember than mundane images.

6. "Chunking" information; that is, arranging a long list in smaller units or categories that are easier to remember. If you can reel off your Social Security number without looking at it, that's probably because it's arranged in groups of 3, 2, and 4 digits, not a string of 9.

7. "Method of loci": This is an ancient and effective way of remembering a lot of material, such as a speech. You associate each part of what you have to remember with a landmark in a route you know well, such as your commute to work.

8. Deep Processing: If you want to learn something and wish to enter information into long- term memory, you have to think about it. You need to consider its meaning and examine its relationship to information you already have. Careful planning and considering the meaning of information, and relating to your knowledge is helpful in learning it and remembering it later. The retention of material is dependent directly upon the depth at which it has been processed. Deeper level in terms of meaning is very important. Second, the depth of processing also refers to the rehearsal of material to be remembered, greater the rehearsal more the chances of recalling the material later.

9.Attending Carefully: Whatever you want to learn and ensure its retention in long term memory you have to put in conscious effort to attend to the material carefully. So, ensure that you direct your full attention to information you want to remember.

10. Minimize interference: You have learned that interference is a major cause of forgetting and you should try to reduce it as much as possible. In general, the more similar the materials to be learned, the more likely they will produce interference. Thus, you should arrange your studies so that you don't study similar subjects one right after the other. For example, if you have to study two languages, study them on different days.

11. Distributed practice: While learning some material it is beneficial to learn it using distributed practice in which there is gap between trials. That is, if the chapter is lengthy, divide the chapter into two or three parts and learn a part in one go. After mastering one part then go to the second and so on. Do not try to cram all information you want to memorize at once.

12. Using memory aids: People use various cues, indicators and signs to connect events. This often facilitates remembering. It is called memories. You can use visual imagery to remember objects and places. For example, if you visit a new place, you can remember the location by remembering severe associated objects and places. You may remember the place to be close to a cinema hall, in front of a signal post and so on.

13. Shorthand codes: You can develop your own shorthand codes to memorize long list of items. You can use the first letter of each word or item and construct a unique "word". For example, to remember the seven constituents colours of light(VIBGYOR; where V stands for Violet, I for Indigo, B for Blue, G for Green, Y for Yellow, O for Orange and R for Red.) During the school days, I used to forget the order of Mughal emperors in history subject. I developed my own shorthand code: BHAJSA" where B stands for Babar, H for Humayun, A for Akbar, J for Jahangir, S for Shahjahan and A for Aurangzeb. It helped me in remembering the names in their order.

10. **Critically Explain the Repression: Forgetting Painful Events. (Refer to page no. 85, and 86)**

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UNIT V

UNIT V	Intelligence: Nature and Definition; Concept of IQ; Theories of Intelligence (Introduction of Basic Concepts): Spearman, Thurston, Guilford, Sternberg, Gardner.

In popular understanding, intelligence means mental abilities enabling one to think rationally, learn readily, act purposefully, and deal effectively with one's environment. In psychological testing, it is a term that has been given many different technical meanings concerned with mental abilities such as verbal reasoning, quantitative thinking, abstract analysis, manipulation of geometric shapes, recognition of similarities and differences between pictured objects.

Intelligence also implies "intellect" as

(a)Capacity : Capacity or power of the mind for thinking and knowing in contrast to those mental faculties by which the individual feels or wills.

(b)Figurative : Figurative references to individuals with marked capabilities for thought, or to thinking powers, in general.

According to the Dictionary of Psychology, **'Intelligence' refers to the ability to function effectively with problems, whereas 'intellect' refers to the rational thought functions of the human mind.**

With the invention of mental tests, the question "what is intelligence" took a different turn. Psychologists proved to be generous to a fault with their definitions of intelligence. A number of definitions has been evolved by psychologists according to their own concept of the term but no two psychologists agree on a single definition of the term

THEORIES OF INTELLIGENCE

Apart from defining "intelligence", psychologists have been concerned to know the structure of intelligence. They have made analyses in an effort to determine its underlying factors. The purpose of these analyses has been to discover if possible the elements or components of intelligence, not only for a better theoretical understanding of this complex process but also to learn what might be the implications for the design and construction of mental tests.

It is not to be inferred, however, that the dynamics of intelligent activity can be adequately understood merely by enumerating and characterizing the components, whatever they might be. Whatever the components, they do not operate independently or in isolation. Understanding the dynamic aspects of mental activity requires some means of characterizing the organization of factors, their inter-relationships and their relation to motivational forces. Philosophers and psychologists developed various theories as regards to the nature of intelligence. The representative theories of intelligence are as follows:

➢ Two-factor Theory

The first and for many years the most influential theory of trait organization based on a statistical analysis of test scores was the two-factor theory. This attempt in analyzing the nature of intelligence was made by English psychologist Charles Spearman in the University of London where he was Professor of Psychology in 1904. He proposed that intellectual abilities were comprised of two factors, general ability or common ability, known as "g" factor and

group of specific abilities known as "s" factor.

General mental ability (g) is a factor necessary for any kind of intellectual functioning. Characteristics of "g" are as follows:

A. It is a universal inborn ability.
B. It is general mental energy.
C. It is constant in the sense that for any individual in respect of all the correlated abilities, it remains the same.
D. The amount of "g" differs from individual to individual.
E. It is used in every life activity.
F. Greater the "g" in an individual, greater the success in life.
G. It is merely a value of magnitude and not something concrete.

Performance on any task requires the operation of an additional "specific mental capability" (s) which is specific to that task. Characteristics of "s" are as follows:

A. It is learnt and acquired in the environment
B. It varies from activity to activity in the same individual.
C. Individuals differ in the amount of "s" ability.

- **Holzinger's Bi-Factor Theory**

Spearman and his adherents later on realised that those tests which do not satisfy the criterion of proportionality and which Spearman has termed distributors may be retained in the correlation matrix, if it is recognized that some of the tests may have a factor in common, in addition to the general factor that is common to all the tests. Holzinger's bi-factor theory which is a variation of Spearman's two factor method accepts a general factor and one or more group factors. The bi-factor may be represented schematically.

- **Sampling Theory**

The two-factor theory has been criticized by some statistical psychologists, notably Thomson and Tryon. In 1916, G. H. Thomson first proposed his sampling theory which he refined in 1935 and still later in 1948. According to this theory intellectual behavior depends upon a large number of independent abilities, which enter into a wide variety of tasks. Sampling theory that maintains that every test samples a certain range of alimentary abilities; some with a wide range and some with a narrow range. The degree of correlation between any two test depends upon the number of units and ability that they have in common**. This theory also explains why more complex subjects like English, Arithmetic or Latin possess more 'g'; for 'g' in them is not unitary but complex.**

SCHEMATIC REPRESENTATION OF THOMSON'S SAMPLING THEORY

Thomson holds that the hierarchical order and the zero tetrad differences can be explained by his sampling theory, according to which any activity such as a mental test calls upon a sample of bonds which the mind can form, and that some of these bonds are common to two tests and cause their correlation From his study Thomson ultimately said that he was more inclined towards Spearman's 'g' and to the later group factors. He thought that the theory of 'g' is, as it were, meaning the whole mind, and the tests were bringing out part of 'g'. He stated that Thurston's work on second order factors had rehabilitated 'g'.

➢ Multifactor Theory (Stimulus-Response Theory)

Thorndike thought that intelligence was neither a unitary quality nor a composite of two factors of Spearman or group factors as given by Thurston, Burt and others. He, as a behaviorist, thought of mental acts as constituted of minute elements operating together. According to this theory intelligence is said to be constituted of a multitude of separate factors or elements, each one being a minute element of ability. Any intellectual activity is dependent upon a great number of these minute factors operating together. Therefore, if performances on any two intellectual activities are positively related, it is due to the number of common elements involved in the two activities.

If two types of mental activities A and B are more highly correlated than are A and C, the reason, according to the multifactor theory, would be that the first pair has more elements in common than does the second pair. In short, the degree of relationship of a pair of tasks is in direct proportion to the number of common elements involved in the tasks.

According to this theory, then, "there is really no such factor as "general intelligence"; there are only many highly specific acts, the number of such depending upon how refined a classification we might wish to make and are capable of making."

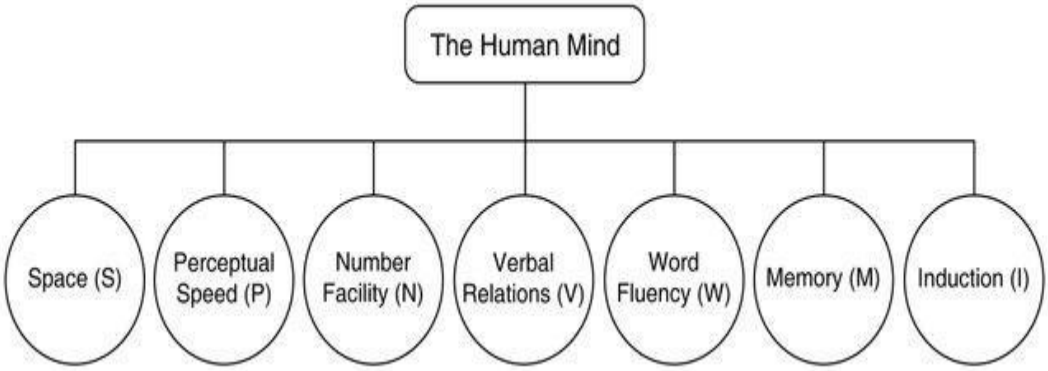
Thorndike's CAVD test designed to measure ability to deal with abstractions has tests of sentence completion (C), arithmetical reasoning (A), vocabulary (V), and the following of directions (D). It is not claimed by Thorndike that these four sets of items encompass the entire range of abstract intelligence. He contended that these measures of abstract intelligence were sufficient bases from which to estimate other aspects of abstract intelligence.

➢ Group-factor Theory

Intermediate between the two factors of Spearman and multifactor theory of Thorndike is the group factor theory put forth by L. L. Thurston. This theory has been advocated by L.L. Thurston, an American engineer turned psychologist and his associates. His assumption was that certain mental operations have in common a primary factor (which is not essentially "g") which gives them psychological and functional unity and which differentiates them from other mental operations. These mental operations constitute in themselves a group and the primary factor or the mental ability operating through that group or bunch of those operations was named as the "group factor" or the primary factor which is relatively independent of such other primary factors operating in certain other group or bunches of mental operations. Thurston and his collaborators concluded that six primary factors emerged clearly enough for identification and use in test design and construction. The six factors identified by Thurston are as shown in Table:

PRIMARY FACTORS (ABILITIES)

1 **Number factor (N)**-The ability to do numerical calculations rapidly and accurately.
2Verbal factor (V)-The ability found in tests involving verbal comprehension. The ability to understand the meaning of words. Vocabulary tests represent this factor.
3 Space factor (S)-The ability involved in any tasks in which the subject manipulates an object imaginably in space. The ability to visualize space form relationships, as in recognizing the same figure presented in different orientations.



4 Word fluency factor (W)-The ability involved whenever the subject is asked to think of isolated words at a rapid rate. The ability to think of words rapidly, as in solving anagrams or thinking of words that rhyme.

5 Reasoning factor (R)-The ability found in tasks that require the subject to discover a rule or principle involved in series or groups of letters. Although it is believed both induction and deduction are involved, it seems that induction is more significant here.

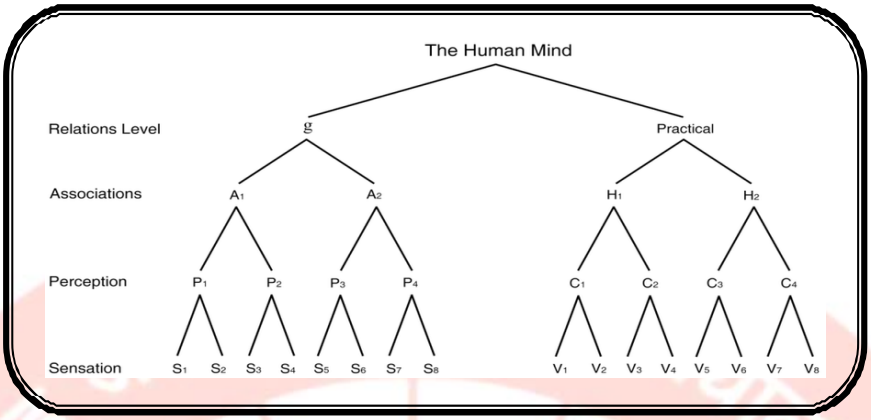
6 Rote memory factor (M)-The ability to memorize quickly. The ability to recall verbal stimuli such as word pairs or sentences.

MODELS OF INTELLIGENCE

- ✔ First is dimensional models, which are most widely applied in mathematics and the physical sciences.
- ✔ The second type of model is hierarchical model, in which there is a parallel development in the recognition of classes and of classes within classes. This type of model has been strongly advocated for an encompassing theory of intellectual abilities and other traits of personality.
- ✔ The third type of model is named as morphological by the astronomer Zwickly. Basically, this model is a cross classification of phenomena in interesting categories, rather than in categories within categories as in the hierarchical model. The most notorious example in science is the chemist's periodic table in which the chemical elements are arranged in rows and columns, each row and column representing a different category. It is also known as a logical matrix. The use of this type of model is advocated by Guilford.
- ✔ A fourth type of model is known as operational type of model useful to conceive events in terms of interconnected series of transmission of information.

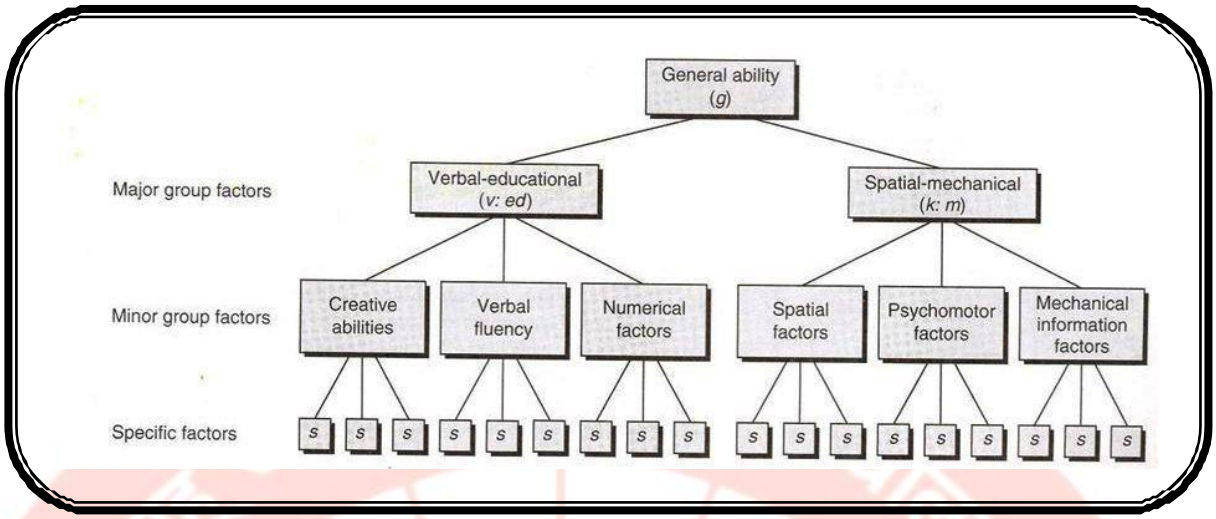
1. **Burt's Model:** As newly discovered factors increased in number, the need for arranging them into some kind of logical inter-relationships became a recognized problem. **Cyril Burt, the British Psychologist,** was one of the first to attempt at it. He suggested that intellectual abilities might be hierarchically organized. From his factor-analytic studies, he argued that comprehensive general factor could be used to represent all intellectual performance. This general factor could also be sub-divided into several group factors accounting for different broad classes of intellectual behavior. These broad group factors according to Burt's conception can be further subdivided into narrower group factors, then down to numerous very specific factors.

BURT'S CONCEPTION OF AN IDEALISED HIERARCHICAL MODEL



Burt conceived of an ideal hierarchy within successive dichotomies, each sub-division of a higher factor to give immediately lower. He identified the various levels of bifurcation as relations at the highest level; associations at the second level; perception at the third level and sensation at the fourth. In fitting group factors into the model, however, Burt had to depart from strict dichotomization for many sub- categories contain more than two factors. At the association level, for example, he recognized a division into memory with a general retentiveness under which are group factors: visual, auditory, kinesthetic and verbal memory factor of fluency and originality. Other general association factors include verbal ability, language ability and arithmetical ability, under each of which are two or three subfactors.

2. **Vernon's Model:** Vernon elaborated Burt's hierarchical theory of intelligence. He, as a more recent worker in the field of intelligence testing, thought that British and American views differed about the number of primary abilities and about "g". Thurstone, Guilford and others broke the mind, according to Vernon, into a number of independent primary mental abilities with some overlapping (which showed a general or second order factor). Thurstone's work, according to Vernon, was carried out on homogeneous university students as the subjects of the study. At this age, due to the impact of cultural requirements, special abilities do get crystallized out of the general mental ability or "g". Whereas British studied whole range of school children and adults in whose case the correlation between quite different tests were termed to be high which pointed to the reasons of an underlying "g" and the specialized abilities were subsidiary group factors which were further composed of specific factors. As Vernon puts it, the lower the age of testees and lesser the effects of education and training, the better is the emergence of "g". But in each situation, the "g" factor, the group factors and the specific factors are there. In other words we can picture the mind as a kind of hierarchy or genealogical tree, where "g" is the most prominent mental ability, in the sense that it accounts for the greatest proportion of differences in abilities.



VERNON'S MODEL OF HIERARCHICAL ORGANIZATION OF ABILITES

At the top of the hierarchy, Vernon places Spearman's "g" factor. At the next level are two broad group factors, corresponding to verbal educational (v:ed) and to practical mechanical (k:m) aptitudes. These major factors may be further subdivided. The verbal-educational factor, for example, yields verbal and numerical sub-factors, among others. Similarly, the practical-mechanical information, spatial and psychomotor abilities. Still narrower subfactors can be identified by further analysis, for example of the verbal tasks. At the lowest level of the hierarchy are the specific factors.

In a later elaboration of the model, Vernon included certain more complex interrelations and cross contributions at the third level, especially in connection with educational and vocational achievement. At the second level a third group factor, the mathematical factor (M) also emerged through statistical analysis. A subject may score equally or differently on the three group factors, v:ed, k:m and M, as they are relatively independent.

Vernon's hierarchical scheme if inverted resembles a genealogical tree with "g" at the bottom, which tends to fall into three major group factors. The three group factors further seem to be broken down into more specific abilities.

3. **Guilford's Structure of Intellect (The Cubic Model):** Guilford, the American Psychologist, rejects the idea of a general intelligence factor and also broad factor groups like Thurstone's primary abilities. He believes that many aspects of intelligence tend to be ignored when items are lumped together to form tests. An item used as a test of verbal ability is distinguished from one that is non-verbal on the basis of its content-words as opposed to pictorial material. But what one does with the content of the test item will depend upon the nature of the task and may be relatively independent of the content. Suppose that a subject is shown pictures of a dozen different objects and is told that he will be asked to recall the names of the objects at some later time. Will this task involve verbal or pictorial ability? To be sure, pictures are presented, but most subjects will name the objects and then rehearse the names rather than try to memorize the pictures themselves.

Guilford maintains that intelligence test items should not be distinguished in terms of content alone, but also in terms of the operations performed upon the content and the product that results. He says that, "several facts based upon experiences in factor analysis of intellectual tests in the United States had cast doubt upon the applicability of a hierarchical structure.

Almost no one reported finding a "g" factor, in fact, the tendency has been for each factor to be limited to a small number of tests in any analysis."

Guilford has attempted to bring order out of the welter of factors, with his theoretical "structure of the intellect". Structure of intellect, briefly written as "SI", is a model of intellect activity that was produced as a result of factor analytic research conducted by J.P. Guilford and his associates in the Psychological Laboratory, at the University of Southern California in the U.S.A.

The "SI" model is an attempt to identify the nature of specific intellectual abilities by generating models of intelligence that postulate numerous intellectual skills. He suggests that since people obviously possess uneven constellations of mental abilities and the theories models, measures of intelligence ought to reflect these differences in a systematic fashion. The "SI" model postulates 180 specific components of intelligence based on 3 broad categories. According to him every mental process or intellectual activity has three dimensions, three basic parameters along which any possible intellectual behavior can take place-namely 'operation', 'product' and 'content'.

The three dimensions of the model represent the operation, content and product of a given kind of intellectual act.

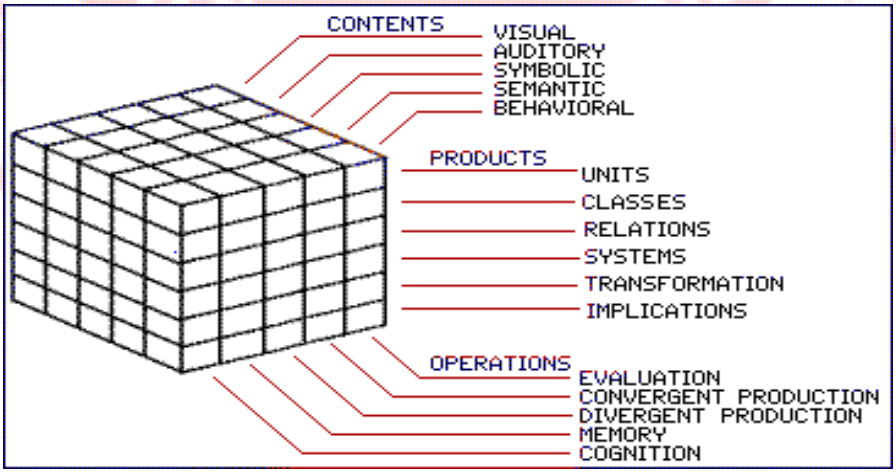
Operations: What one does to the environment, basic psychological processes.

Contents: The nature of the information in the environment, the kind of material or content to which the person responds.

Products: The result of an operation upon the content, which produces the final overt response.

Each broad category has subcategories. 'SI' model consists of six types of mental operations, five types of content and six products.

At present the maximum number of factors can be 6x5x6= 180. Operation is further sub-classified into six components, namely (i) cognition, (ii) memory recording, (iii) memory retention, (iv) divergent thinking, (v) convergent thinking, and (vi) evaluation. Content is classified as (i) visual, (ii) auditory, (iii) symbolic, (iv) semantic, and (v) behavioral. Product comprises of (i) units, (ii) classes, (iii) relations, (iv) systems, (v) transformation, and (vi) implications.



GUILFORD'S MODEL (STRUCTURE OF INTELLECT)

The international Encyclopedia of Education too states, **"Guilford's SI model theory has led to the development of many educationally appropriate measures particularly in the area of creativity."**

Very Short Questions/True Facts (One Sentence):

1. What did Galton argue was the indicator of intelligence?-**sensory discrimination**
2. What spurred the development of Binet's intelligence test?-**the French government's aim to identify children who are less able.**
3. The reporting of which uncomfortable 'fact' resulted from Yerkes' mass measurement of IQ during the First World War?-**the average citizen of the USA had an IQ score equivalent to someone with learning difficulties.**
4. What does IQ, the numerical measure of intelligence given by the performance in an intelligence test, stand for?-**Intelligence Quotient**
5. Spearman's finding that one person's results on a variety of different cognitive tests tend to be consistent with each other is referred to as-**Positive Correlation**
6. What statistical test did Spearman develop and use to assess whether intelligence is underpinned by one or many factors?- **Factor Analysis**
7. How many mental abilities did Thurstone suggest constituted intelligence?-**7**
8. Those supporting the existence of a uniting 'g factor' underpinning intelligence, by implication, also believe-**intelligence is predominantly hereditary and can be measured psychometrically.**
9. What term is given to a group of instruments that have been developed for measuring mental characteristics?-**Psychometric Tests**
10. What is the Flynn effect?-**the average IQ score of people is slowly but steadily going up over time**

Short Questions (100-120 words)

1. Define Intelligence.

Intelligence includes the ability to benefit from past experience, act purposefully, solve problems, and adapt to new situations. **Intelligence** refers to the global capacity of an individual to act purposefully, think rationally, and deal with their environment effectively—David Wechsler-individuals' abilities to understand complex ideas, to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning, to overcome obstacles by careful thought.

2. What is Cognition?

Cognition is "the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses". It encompasses many aspects of intellectual functions and processes such as attention, the formation of knowledge, memory and working memory, judgment and evaluation, reasoning and "computation", problem solving and decision making, comprehension and production of language.

3. What is the difference between the g and the s factor of Intelligence?

General intelligence, also known as g factor, refers to the existence of a broad mental capacity that influences performance on cognitive ability measures. Charles Spearman first described the existence of general intelligence in 1904 whereas an s-factor score represents a person's ability within one particular area. Put all the s-factors together, and you get the g-factor. Commonly measured s-factors of intelligence include memory, attention and concentration, verbal comprehension, vocabulary, spatial skills, and abstract reasoning.

4. What is Problems Solving?

Problem solving is the act of defining a problem; determining the cause of the problem; identifying, prioritizing, and selecting alternatives for a solution; and implementing a solution.

5. Define Brain Storming.

It is a group problem-solving technique that involves the spontaneous contribution of ideas from all members of the group conducted several brainstorming sessions also the mulling over of ideas by one or more individuals in an attempt to devise or find a solution to a problem

6. What is the difference between army alpha and army beta tests?

The Alpha test was a written exam given to the literate and tested things like the ability to follow directions, arithmetic, and analogies. The Beta test was given to the illiterate and used pictures and symbols to test things like identification of patterns and picture completion.

7. Explain Charles Spearman's Two Factor Theory.

G or g-factor: The single, general factor for mental ability assumed to underline intelligence in some early theories of intelligence.

Mental operations which are primary and common to all performances. Given that there was a correlation between performance on the different types of tests, the assumption was that there was a general, global intellectual ability underlying performance on the various measures—the g-factor. This general intelligence factor was thought to underlie performance in every aspect of intelligence, and it was the g-factor that was presumably being measured on tests of intelligence.

S or s-factor: the specific factor for mental ability assumed to contribute to intelligence in a certain field. specific abilities which allow them to excel in their respective domains. All cognitive performance can be explained by them.

8. Explain in brief Thurstone Primary Mental Abilities. (Refer to page no. 96, and 97)

9. What do you understand by Guilford theory of Intelligence. (Refer to page no. 99, and 100)

10. Explain in brief the Gardner's Theory of Multiple Intelligences in relation to Education.

Gardner believes that people should be taught in school to help them reach their vocational and avocational goals following their spectrum of intelligence. Gardner, in an interview, mentioned that he is now considering adding teaching-pedagogical intelligence, which is the ability to teach other people successfully.

While several books have been written on the application of Gardner's theory in education and many schools have adopted it for educational use, Gardner himself has criticized the way his theory has been used in education. His vision is more in line with making use of specific types of capabilities of individuals. He believes in not generic curriculums and teaching methods for students because it results in people forgetting most of what they have been taught after their degree is complete.

Long / Extensive Questions (3 to 5 pages):

1. Discuss Artificial Intelligence in relation with Intelligence.

Artificial Intelligence (AI) is now recognized as one of the major scientific endeavors of the twentieth century. In the last decade, there has been an extraordinary growth in the practical application of AI to many fields : expert systems in industry, natural language understanding systems, robotics and so on. This growth has been fueled by unprecedented support from American, European and Japanese governments.

AI is the science of designing computers to do things which would be considered intelligent if done by people. It can solve the problems in all the areas including education. Like all other new fields, Intelligent Computer Aided Instructions (ICAI) is both derivative and innovative. On the one hand, ICAI researchers bring with them or adopt theories and

methodologies from associated disciplines such as psychology and computer science. On the other hand, ICAI is innovative in that it contributes ideas back to associated disciplines and also-as it must if it is to justify its own label - generates research guess flow of its own.
Intelligent machines are often referred so as self-organizing systems. In the strict sense of the words, such machines cannot exist since they would have to operate without external motivation of any kind. However, if external motivation is allowed, so that the system can be provided with criteria with which to evaluate its response, learning can occur.

Any attempt to reproduce human brain by extant technology is doomed to failure because of our inability to produce the intricate complexities and to simulate the detailed mechanism of any but the simplest neuron. It is quite unlikely that our knowledge encompasses all of the subtleties of interconnection required, and our models are certainly much more than first attempts at producing neuromeres'. Even if suitable techniques are available, all we would achieve by a slavish modeling of the brain would be an extremely complicated logical device. Without the secret of life, we cannot hope to construct an automation which would mimic the wisdom of Plato, the inquisitiveness of Newton^ the inspiration of John Kennedy or the leadership of Mahatma Gandhi.

What we can hope to do, however, is to devise electronic systems which can operate in restricted areas performing those tasks which are currently delegated to humans, not because they require the intrinsic facilities possessed by a man, but because, heretofore, their performance has been beyond the capability of electronic systems. It is to be hoped that the application of these techniques will provide the keys to develop new approaches to the technology which will be required to support the continuing scientific revolution in the new millennium.

Very recently, Scientists at Bhabha Atomic Research Centre (BARC), Mumbai, have made use of AI to detect earthquakes. They have developed the techniques to detect very weak seismic signals which are otherwise difficult to detect. They have also designed two artificial neural networks (ANNs) which emulate the network of neurons in humans - for detecting and identifying weak Seismic signals. It is all too apparent that any major advance in the development of AI per se depends on the state of our knowledge of biological phenomena. But it can be confidently predicted that continued work in this field will yield useful and probably unexpected results, which will greatly affect the design of Philosophy and implementation of future electronic system.

Thus, artificial intelligence has nothing to do with what we have understood "What human intelligence is" in this very chapter. And, intelligence tests are, therefore, going to exist in one form or another, under one name or another till mankind is to exist on the earth.

3. Discuss PASS Model of Intelligence in detail.

Planning, Attention-arousal, and Simultaneous-successive (PASS) Model of Intelligence
This model has been developed by J.P. Das, Jack Naglieri, and Kirby (1994). According to this model, intellectual activity involves the interdependent functioning of three neurological systems, called the functional units of brain. These units are responsible for arousal/attention, coding or processing, and planning respectively.

Arousal/Attention : State of arousal is basic to any behavior as it helps us in attending to stimuli. Arousal and attention enable a person to process information. An optimal level of arousal focuses our attention to the relevant aspects of a problem. Too much or too little arousal would interfere with attention. For instance, when you are told by your teacher about a test which s/he plans to hold, it would arouse you to attend to the specific chapters. Arousal forces you to focus your attention on reading, learning and revising the contents of the chapters.

Simultaneous and Successive Processing : You can integrate the information into your knowledge system either simultaneously or successively. Simultaneous processing takes place when you perceive the relations among various concepts and integrate them into a meaningful pattern for comprehension. For example, in Raven's Progressive Matrices (RPM) Test, a design is presented from which a part has been removed. You are required to choose one of the six options that best completes the design. Simultaneous processing helps you in grasping the meaning and relationship between the given abstract figures. Successive processing takes place when you remember all the information serially so that the recall of one leads to the recall of another. Learning of digits, alphabets, multiplication tables, etc. are examples of successive processing.

Planning: This is an essential feature of intelligence. After the information is attended to and processed, planning is activated. It allows us to think of the possible courses of action, implement them to reach a target, and evaluate their effectiveness. If a plan does not work, it is modified to suit the requirements of the task or situation. For example, to take the test scheduled by your teacher, you would have to set goals, plan a time schedule of study, get clarifications in case of problems and if you are not able to tackle the chapters assigned for the test, you may have to think of other ways (e.g., give more time, study with a friend, etc.) to meet your goals.

These **PASS** processes operate on a knowledge base developed either formally (by reading, writing, and experimenting) or informally from the environment. These processes are interactive and dynamic in nature; yet each has its own distinctive functions. Das and Naglieri have also developed a battery of tests, known as the Cognitive Assessment System (CAS). It consists of verbal as well as non-verbal tasks that measure basic cognitive functions presumed to be independent of schooling. The battery of tests is meant for individuals between 5 and 18 years of age

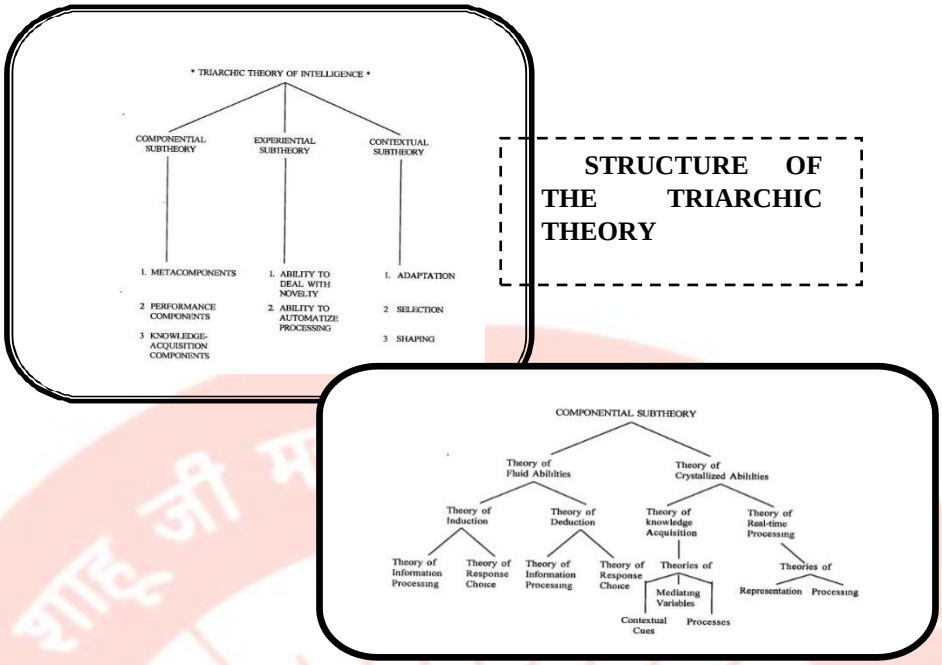
4. Throw light on Sternberg's Triarchic theory of Human Intelligence.

Robert Sternberg is a major figure in intelligence theory. He aims at nothing less than a kind of grand synthesis of ideas that for others are mutually contradictory. His three-part theory accommodates both the traditional view that intelligence is general, the same from one culture to another, and the counter traditionalist view that environment-whether classroom or inner-city streets-shapes intelligence to different but equally valid ends. And, like the physicist who is comfortable with the knowledge that light is both a particle and a wave, Sternberg can look at intelligence as a set of components, "a wide array of cognitive and other skills", which are at the same time strongly unified by what he calls executive processes.

Cognitive psychologists are looking at behavior how people actually solve problems and analyze the mental steps involved. But as Sternberg points out, the problems on which most psychological information-processing theories are based have largely been of the verbal analogy, sequence completion and spatial orientation type familiar to anyone who has come up through American schools.

In everyday life, though, as Sternberg writes in his recent book, 'Beyond I.Q.', "people no more go around solving analogies.... than they go around pressing buttons in response to lights or sounds"

Structure of the Triarchic Theory



STRUCTURE OF THE TRIARCHIC THEORY

This theory seeks to understand intelligence in terms of three sub-theories:

A. **Contextual sub theory:** The contextual sub theory says that intelligence is intertwined with the individual's environment. Thus, intelligence is based on how one functions in everyday circumstances, including one's ability to a) adapt to one's environment, b) select the best environment for oneself, or c) shape the environment to better fit one's needs and desires.

B. **Experiential sub theory:** The experiential sub theory proposes a continuum of experience from novel to automation to which intelligence can be applied. It's at the extremes of this continuum that intelligence is best demonstrated. At the novel end of the spectrum, an individual is confronted with an unfamiliar task or situation and must create a way to deal with it. At the automation end of the spectrum, one has become familiar with a given task or situation and can now handle it with minimal thought.

C. **Componential sub theory:** The componential theory outlines the various mechanisms that result in intelligence. According to Sternberg, this sub theory is comprised of three kinds of mental processes or components:

1. **Meta components** enable us to monitor, control, and evaluate our mental processing so we can make decisions, solve problems, and create plans.
2. **Performance components** are what enable us to take action on the plans and decisions arrived at by the meta components.
3. **Knowledge-acquisition components** enable us to learn new information to help us carry out our plans.

Sternberg sees three areas in which intelligence is exercised; the external (or contextual), the experiential and the internal. Intelligence is always mental activity, but each part of the theory considers it in relation to a different domain.

The context is, simply, the external environment in which intelligence functions, whether classroom, office or squash court. The same person may use his intelligence in each environment in a different way. Experience is the domain in which people face new situations,

and in which intuition, insight and creativity - nonrational processes that simply don't come into the usual -information processing picture-operate mental mechanisms, by which intelligence relates to the internal world of the individual, are brought to bear on intelligence through experience. In short, Sternberg's triarchic theory is intended to get at the kind of intelligence that counts in real life-what Neisser calls general and Sternberg calls practical. Along with a number of other psychologists, many of whom disagree with him on almost everything else, Sternberg aims to change the way one thinks about intelligence. Ultimately, he hopes to revise intelligence testing to take practical intelligence into account.

5. Explain Gardner's theory of Multiple Intelligence.

Gardner's theory differentiated intelligence in modalities and was proposed in his book published in 1983 'Frames of Mind: The Theory of Multiple Intelligences'. He suggested that his theory meant to 'empower learners' and not limit them to a single learning modality. He has also emphasized the need to reform the way educational curriculums are created to help students focus on their true capabilities rather than going through a curriculum that is a mile wide and an inch deep. The eight types of human intelligence, according to Gardner, shape a person's problem-solving capabilities. They are:

a. **Musical-Rhythmic-** According to Gardner, people who possess a high degree of musical intelligence have good thinking in rhythms, sounds, or patterns. Therefore, a person with higher musical-rhythmic intelligence can be a good musician, conductor, composer, singer, etc.
b. **Visual-Spatial-** People who possess better visual-spatial intelligence can visualize objects better, such as images, illustrations, maps, charts, videos, and the like. A few examples of suitable professions for such people might include working as an architect, photographer, interior designer, etc.
c. **Verbal-Linguistic-** When we look at teachers, writers, public speakers, newscasters, and actors, we usually see people with a high degree of verbal-linguistic intelligence. This type of intelligence enables people to master the use of words, both verbally and in written form.
d. **Logical-Mathematical-** Some people can solve complex math problems in minutes or even seconds, whereas; others find it hard to grasp them even after spending a long time pondering how they work. A high degree of logical-mathematical intelligence makes it possible for some people to be good at logical and mathematical skills, ranging from scientists to mathematicians and accountants.

e. **Bodily-Kinesthetic-** Farmers, mechanics, carpenters, dancers, and athletes possess good hand-eye coordination and agility. According to Gardner's model, such people have high bodily-kinesthetic intelligence.
f. **Interpersonal-** People with good interpersonal intelligence are proficient at coaching, customer service, mental health counseling, sales, etc. This type of intelligence enables better public dealing, as these people can better evaluate other people's emotions, moods, desires, and motivations.
g. **Intrapersonal-** People with better intrapersonal intelligence like to better understand and evaluate their own emotions, motivations, and relationship with others. Someone with a high degree of intelligence can be a good author, philosopher, or entrepreneur. Better intrapersonal intelligence leads to introspection. Self-evaluation can enable people to explore their philosophical side and explore things from a lens that gives them depth in understanding

things.

h. **Naturalistic-** Biologists, gardeners, farmers, animal trainers, and geologists have an in-depth understanding of nature. These people have real intelligence that allows them to be in tune with nature.

6. Explain Models of Intelligence in detail. (Refer to page no. 97-100).

7. What extent is our intelligence the result of heredity (nature) and environment (nurture)? Discuss.

(i) Whether intelligence is evolved or it is developed due to the environment, is a question of debate.

(ii)Lot of studies have been done to determine the role of nature and nurture.

(iii)Here we will discuss the controversy with the help of various twin studies, adoption studies and environmental studies.

On the basis of twin studies co-relation results are as follows:

(i)Identical twins reared together correlate 0.90

(ii)Identical twins reported early in childhood and reared in different environments correlate 0.72

(iii)Fraternal twins reared together correlate 0.60

(iv)Siblings reared together correlate 0.50

(v) Siblings reared apart correlate 0.25

•Adoption Studies before the Age of 6-7 Years

These studies of adopted children show that children's intelligence is more similar to their biological parents.

These studies provide evidence that intelligence is determined because of nature.

•Adoption Studies after the Age of 6-7 Years

According to these studies as children grew older tends to more closer to that of their adoptive parents.

Environmental Studies

Evidence for the influence of environment (Nurture) on the basis of Twin studies.

(i) The intelligence score of twins reared apart as they grew older, tends to more closer to that of their adoptive parents.

(ii)On the basis of differences in environment, children from disadvantaged homes adopted into families with higher, socio-economic status exhibit an increase in their intelligence scores.

(iii)Environmental deprivation lowers intelligence. Factors such as nutrition, good family background and quality schooling increase growth rate of intelligence.

(iv)There is general consensus among psychologists that intelligence is a product of complex interaction of heredity (Nature) and environment (Nurture).

(v)Heredity provides the potentials and sets a range of growth whereas environment facilitates the development of intelligence.

8. Any intellectual activity involves the independent functioning of three 'neurological systems'. Explain with reference to PASS model. (Refer to answer of Q.3).

9. What is IQ? How do psychologists classify people on the bases of their IQ scores? (Refer to "True Facts").

10. Discuss how interplay of Nature and Nurture influences intelligence. (Refer to answer of Q.7).

11. All persons do not have the same intellectual capacity. How do individuals vary in their intellectual ability? Explain. (Refer the content of the chapter).

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UNIT VI

UNIT VI	Personality: Definition and Determinants; Approach of Personality (Basic Concepts): Trait approaches (Allport and Cattell); Psychodynamic (Freud); Humanistic (Rogers and Maslow).

The term personality is used in a number of ways including the apparent features of a person. However, psychologists use it to refer to the characteristic pattern of thinking, feeling and acting. By characteristic pattern we mean the consistent and distinctive ways our ideas, feelings and actions are organized.

When we talk about personality, we usually refer to the totality or whole of the person. Thus, the enduring pattern expressed by the person in various situations is the hall mark of personality. Interestingly the theories of personality go beyond the literal meaning of "personality" which stands for large masks used by actors in ancient Greek drama. Contrary to this the personality theorists view 'personality' as the essence of the person. It is a person's "true" inner nature. The unique impression that a person makes on others is equally important in understanding personality. However, the concept of personality has been defined by psychologists in many ways and it is the theoretical perspective or position which directs our attention to particular aspects of personality.

Understanding personality has proved to be a difficult and challenging task. It's so complex that no single theory is able to cover the total personality. The different theories approach the structure and functioning of personality from different positions. There are many theories of personality each provides different answers about the way they treat the issues about personality functioning. In particular, they provide different explanations about the role of conscious/unconscious factors, determinism/freedom in functioning, role of early experience, role of genetic factors, uniqueness/universality etc. In the present lesson you will learn about four major theoretical perspectives of personality. They include psychoanalytic, trait, humanistic and social-cognitive perspectives.

Personality is the unique combination of patterns that influence behavior, thought, motivation, and emotion in a human being. An individual's personality is the combination of traits and patterns that influence their behavior, thought, motivation, and emotion. It drives individuals to consistently think, feel, and behave in specific ways; in essence, it is what makes each individual unique. Over time, these patterns strongly influence personal expectations, perceptions, values, and attitudes. Personality is something people believe understand. Most people think they have achieved some expertise in this domain and they believe that they know or understand other people. We attempt to foretell behavior, deduce conversations & make interpretations about actions of others. If someone affronts us, acts eccentrically, or seems overly benevolent, we will speedily attempt to comprehend their motives. Additionally, we habitually cull out inferences about people in terms of personality traits possessed. Being self-proclaimed competent judges of personality, we make use of our expertise in personality assessment on an everyday basis; yet, most of us would be unable to explicate precisely the way we cull out our suppositions about others.

The word "personality" comes from the Latin expression "persona" meaning mask. Personality is then conceptualized as one's public self, that facet of ourselves we handpick to demonstrate to the world. This definition also implies that significant aspects of a person remain obscured.

Other descriptions of personality range from the prevalent conception that personality allows an individual to be socially effective (a person may be regarded as a great personality, an awful personality, or no personality at all), to very technical definitions involving mathematical formulations. Therefore, numerous definitions of personality exist. Every theory of personality then can be seen as an endeavour to define personality and these descriptions vary significantly from one another. However, there are at least two basic concepts in defining personality:

1. **Individuality** –Those facets differentiating one person from everybody else. It is both representative of and inimitable to a certain person.
2. **Consistency** – Perseveres over time and across situations. It constitutes durable, habitual elements of behavior, consequently affords permanence and soundness to an individual's behavior. Thus, the conception of personality is used to illuminate

In 400 BC, Hippocrates, a physician and a very acute observer, claimed that different personality types are caused by the balance of bodily fluids. The terms he developed are still sometimes used today in describing personality. Phlegmatic (or calm) people were thought to have a higher concentration of phlegm; sanguine (or optimistic) people had more blood; melancholic (or depressed) people had high levels of black bile; and irritable people had high levels of yellow bile.

Hippocrates' views about the biological basis of personality are echoed in contemporary theories that link the presence of brain chemicals such as noradrenaline and serotonin to mood and behavior.

But how do we define 'personality'? Within psychology two classic definitions are often used:

"Personality is a dynamic organisation, inside the person, of psychophysical systems that create the person's characteristic patterns of behavior, thoughts and feelings." -G.W. Allport, 1961

"More or less stable, internal factors... make one person's behavior consistent from one time to another, and different from the behavior other people would manifest in comparable situations." -Child, 1968

THE PSYCHOANALYTIC PERSPECTIVE

By the early years of the twentieth century, Sigmund Freud (1856–1939) had begun to write about psychoanalysis, which he described as 'a theory of the mind or personality, a method of investigation of unconscious process, and a method of treatment' (1923/62). Central to a psychoanalytic approach is the concept of unconscious mental processes – the idea that behavioral modifications between persons and to understand the behavioral stability within each individual.

Personality psychology is the study of human personality and how it varies among individuals and populations. Personality has been studied for over 2000 years, beginning with Hippocrates in 370 BCE and spanning through modern theories such as the psychodynamic perspective and trait theory.

Historical Antecedents in the Study of Personality. The study of personality has a lengthy past with Plato, Aristotle, Descartes and Machiavelli among several other scholars exploring human personality and providing compelling insights into the human psyche. Modern theorists to a

great magnitude reverberate notions documented by these earlier thinkers.

Plato (427–347 BCE) Plato conceptualized the soul as the seat of personality. In his celebrated discourse, The Republic (c. 390 BCE), he held the soul as consisting of 3 elementary forces controlling human behavior: appetite, emotion and reason. Reason assumed the utmost importance and powerful but emotion and appetite are held as the "lower passions" and reason keeps the more primitive forces of appetite and emotion at bay.

Aristotle (384–322 BCE) Aristotle referred to the seat of personality as the psyche, a product of biological processes. His portrayal of the psyche makes him the first biological psychologist. Psyche included a set of faculties placed in a hierarchy of importance. a) nutritive faculty—organism's basic drives to meet its bodily needs, found in plants, animals & people, b) perceptual – aspect of mind that interprets sensory data, present in animals and people and c) intellectual which is unique to human beings.

Descartes (1596–1650) French philosopher Descartes regarded human personality as the product of the collaboration of divine and primal forces. Essential force behind human personality is the immortal soul— untainted, flawless, and incorporeal. He wanted to explain how spiritual being worked together with physical form. His study of a bodily dissection made him think he had solved this Mind-body problem when he observed a minor body in the seeming centre of the brain recognized as the pineal gland or pineal body by the Greco- Roman physician Claudius Galen (c. 130–c. 200 CE) as its contour reminded him of a pine cone. Descartes (1649) reached the deduction that this cone-shaped endocrine gland is the point of contact between soul and body. The philosophical position that 2 materials—matter & spirit, or brain & mind—exist independently of each other but while interacting called the Cartesian dualism became a popular view in Christian West after 17th century as it "explained" the presence of human free will and consciousness in an otherwise mechanical world.

Machiavelli (1469-1527) Niccolò Machiavelli, a political thinker and Florentine diplomat, theorized that personality is best understood in a social context. In the Machiavellian worldview, people are fundamentally egotistical, avaricious, unthankful, and rancorous. Further, 2 primary forces define human character, i) virtù (almost untranslatable Italian term), best described as a combination of decisiveness, courage and confidence; ii) fortuna (Latin word for luck). Powerful leaders are made by a good dose of virtù and fortuna. Machiavelli (1546/1935) cautioned that leaders who acting out of kindness and a faith in the essential goodness of humanity will every time fail ("nice guys finish last.") Major philosophers from ancient Greece and Rome through the Enlightenment did propose some form of personality theory, and their ideas served as the groundwork of theories set forth by modern psychologists.

THE BIOLOGICAL PERSPECTIVE ON PERSONALITY

The biological perspective on personality emphasizes the internal physiological and genetic factors that influence personality. It focuses on why or how personality traits manifest through

biology and investigates the links between personality, DNA, and processes in the brain. This research can include the investigation of anatomical, chemical, or genetic influences and is primarily accomplished through correlating personality traits with scientific data from experimental methods such as brain imaging and molecular genetics.

TEMPERAMENT

In psychology, "temperament" refers to the personality tendencies that we show at birth (and that are therefore biologically determined). For example, Thomas and Chess (1977) found that babies could be categorized into one of three temperaments: easy, difficult, or slow to warm up. After birth, environmental factors (such as family interactions) and maturation interact with a child's temperament to shape their personality (Carter et al., 2008).

Research suggests that there are two dimensions of our temperament that are important parts of our adult personality: reactivity and self-regulation (Rothbart, Ahadi, & Evans, 2000). *Reactivity* refers to how we respond to new or challenging environmental stimuli; *self-regulation* refers to our ability to control that response (Rothbart & Derryberry, 1981; Rothbart, Sheese, Rueda, & Posner, 2011). For example, one person may immediately respond to a new stimulus with a high level of anxiety while another barely notices it.

Genetics and Personality

The field of behavioral genetics focuses on the relationship between genes and behavior and has given psychologists a glimpse of the link between genetics and personality. A large part of the evidence collected linking genetics and the environment to personality comes from twin studies, which compare levels of similarity in personality between genetically identical twins.

The Brain and Personality

The biological approach to personality has also identified areas and pathways within the brain that are associated with the development of personality. A number of theorists, such as Hans Eysenck, Gordon Allport, and Raymond Cattell, believe that personality traits can be traced back to brain structures and neural mechanisms, such as dopamine and seratonin pathways. Researchers using a biological perspective will seek to understand how hormones, neurotransmitters, and different areas of the brain all interact to affect personality.

THEORIES OF PERSONALITY

Carl Jung: Collective Unconscious

Carl Jung (1875–1961) was one of the first prominent analysts to break away from Freud. Jung worked with Freud in the early stages of his career, and was viewed by him as the disciple who would carry on the Freudian tradition. But Jung saw humans as being guided as much by aims

and aspirations as by sex and aggression. To distinguish his approach from classic psychoanalysis, Jung named it analytical psychology (1951). A basic assumption of his theory is that personality consists of competing forces and structures within the individual that must be balanced. Unlike Freud, he emphasized conflicts between opposing forces within the individual, rather than between the individual and the demands of society, or between the individual and reality.

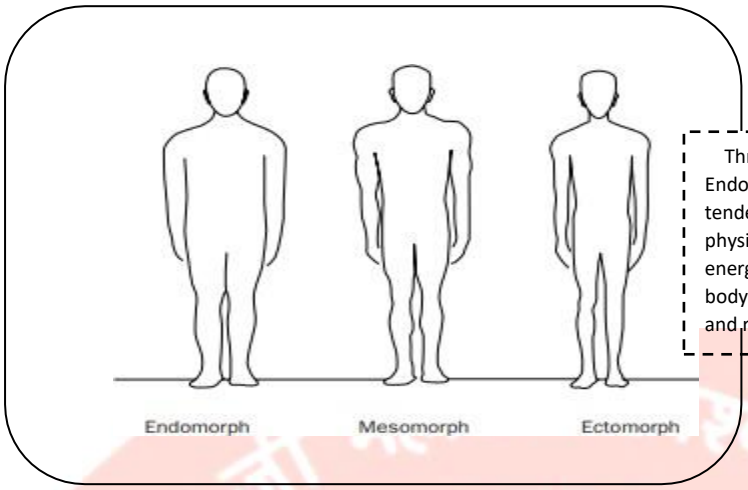
Jung was opposed to the central role of sex and aggression in human life. Instead he proposed that people are motivated by more general psychological energy. He proposed that the deepest part of one's psyche comprises the collective unconscious. It is a set of influences inherited from our family and the human race. The collective unconscious contains archetypes which are the mental images of a particular person, object or experience. Hero, powerful father, innocent child, nurturing mother are example of archetypes.

Alfred Adler: Feelings of Inferiority and Superiority

Adler proposed that the central human motive is that of striving for superiority. It arises from feelings of inferiority that are experienced during infancy and childhood During this period the child is helpless and depends on others for help and support. The psychoanalytic ideas have been criticized on the ground that there is inadequate evidence to support the theory.

THE TRAIT PERSPECTIVE

Traits – or descriptors used to label personality – have their origins in the ways we describe personality in everyday language. In the early years of personality theory, many theorists used the term types to describe differences between people. Sheldon (1954), for example, categorized people according to three body types and related these physical differences to differences in personality. Endomorphic body types are plump and round with a tendency to be relaxed and outgoing. Mesomorphic physiques are strong and muscular, and usually energetic and assertive in personality. Ectomorphic body types are tall and thin and tend to have a fearful and restrained personality. Not only is it unlikely that personality can be mapped to body type, but the idea that all people can be allocated to a small number of categories is challenged by modern trait theories.



Three body types, according to Sheldon (1954). Endomorphic body types are plump and round with a tendency to be relaxed and outgoing. Mesomorphic physiques are strong and muscular, and usually energetic and assertive in personality. Ectomorphic body types are tall and thin and tend to have a fearful and restrained personality.

Traits are characteristic behaviors and conscious motives. They represent a relatively stable and enduring predisposition to behave in a given way. Traits are frequently used in describing people. The focus of trait approach is very common and involves enumerating list of personal characteristics. Trait theories of personality identify, describe and measure individual differences. The apparent traits are called surface traits (e.g. happy, cordial). Contrary to this there are certain source traits.

CATTELL'S 16 TRAIT DIMENSIONS

Gordon Allport (1897–1967) made the first comprehensive attempt to develop a framework to describe personality using traits. Allport and Odbert (1936) used Webster's (1925) New International Dictionary to identify terms that describe personality. This work was developed further by Raymond Cattell (1905– 97), who used a statistical procedure called factor analysis to determine the structure of personality. Factor analysis is a tool for summarizing the relationships among sets of variables by identifying those that co-vary and are different from other groups of variables (see chapter 13). In personality theory, factor analysis can be used to identify which sets of variables most simply and accurately reflect the structure of human personality. Like Allport, Cattell believed that a useful source of information about the existence of personality traits could be found in language, the importance of a trait being reflected in how many words describe it. Cattell called this the lexical criterion of importance. Building on Allport's work, Cattell (1943) collated a set of 4500 trait names from various sources and then removed obvious synonyms and metaphorical terms, until he reduced these to 171 key trait names. Cattell collected ratings of these words and factor- analysed the ratings.

Cattell's subsequent investigations yielded three types of data, which he categorized as follows:

L-data – life record data, in which personality assessment occurs through interpretation of actual records of behavior throughout a person's lifetime (e.g. report cards, ratings by friends and military conduct reports); n
Q-data – data obtained by questionnaires (e.g. asking people to rate themselves on different characteristics); and
T-data – or objective psychometric test data (e.g. the thematic apperception test).

On the basis of this research, Cattell (1947) developed a model of personality describing 16 trait dimensions. He then developed a questionnaire to measure these traits (Cattell, Eber & Tastuoka, 1977) called the Sixteen Personality Factors Questionnaire (16PF).

Here are the 16 trait dimensions used in the 16PF:

Factor		Descriptors	
A	Warmth	Reserved	Outgoing
B	Reasoning	Less Intelligent	More Intelligent
C	Emotional Stability	Affected by feelings	Emotionally stable
E	Dominance	Humble	Assertive
F	Liveliness	Sober	Happy-go-lucky
G	Rule Consciousness	Expedient	Conscientious
H	Social Boldness	Shy	Venturesome
I	Sensitivity	Tough-minded	Tender-minded
L	Vigilance	Trusting	Suspicious
M	Abstractedness	Practical	Imaginative
N	Privateness	Straightforward	Shrewd
O	Apprehension	Self-Assured	Apprehensive
Q1	Openness to Change	Conservative	Experimenting
Q2	Self-Reliance	Group-dependent	Self-sufficient
Q3	Perfectionism	Self-conflict	Self-control
Q4	Tension	Relaxed	Tense

FIVE FACTORS OF PERSONALITY

Although trait theories were well established by the 1960s, there was no consensus concerning the number or nature of the traits that make up personality. Replications of Cattell's work in factor analysis often failed to find the original factor structure he described. Instead, a number of studies using Cattell's variables came up with a simpler five factor structure (Fiske, 1949; Tupes & Christal, 1958, 1961). Since then, further research has confirmed a basic five actor model of personality or 'Big Five' (Digman, 1990; Goldberg, 1993):

Extraversion	**Sociable vs. retiring Fun-loving vs. sober Affectionate vs. reserved**
Agreeableness	Softhearted vs. ruthless Trusting vs. suspicious Helpful vs. uncooperative
Conscientiousness	Well organized vs. disorganized Careful vs. careless Self-disciplined vs. weak willed
Neuroticism	Worried vs. calm Insecure vs. secure Self-pitying vs. self-satisfied
Openness	Imaginative vs. down-to-earth Prefers variety vs. prefers routine Independent vs. conforming (From Costa & McCrae, 1985)

THE HUMANISTIC PERSPECTIVE

These theories propose that within each individual is an active creative force, often called "self". This force seeks expression. It develops and grows. This perspective, also known as the third force, emphasizes on human potential and characteristics like self-awareness and free will. It views human beings as innately good. The conscious and subjective perception of self is considered very important. Carl Rogers and Abraham Maslow are the main proponents of

the humanistic perspective. Carl Rogers thinks that the basic human motive is actualizing tendency. It is the innate drive to maintain and enhance the human organism.

Carl Rogers (1902–87) saw humans as intrinsically good and as having an innate desire for self-improvement. He believed that self-concept is critical to our experience of the world, and that this develops from the child's perceptions of his parents' approval. Rogers believed that all people have a basic need for positive regard – approval and love. How we feel about ourselves is determined by how others react to or approve of us, and we tend to be unhappy if we feel that others are not happy with us. According to Rogers, children develop conditions of worth – criteria for what we must or must not do in order to gain approval. Although this is essential to the socialization of children, Rogers also argued that conditions of worth may interfere with personal development if our sole objective is to gain approval from others. Experiencing unconditional positive regard – love and affection – enables us to grow and to satisfy our core tendency, which is to fulfil our potential by developing our capacities and talents to the full. This is called self-actualization. Activities that are self- actualizing are perceived as satisfying, says Rogers, whereas activities that are incompatible with self-actualization are frustrating. From a scientific perspective, the tendency to self- actualize is vague and untestable. While we may all have the same capacity to self-actualize, the form that actualization takes will be unique to each individual, making it impossible to establish objective criteria for measurement.

CLIENT-CENTRED THERAPY

Rogers developed a therapeutic approach known as client-centered therapy, which gives a central role to the therapist's unconditional positive regard for the client. The therapist has to be trusting, accepting and empathic. Rogers argued that this helps the individual in therapy to recognize and untangle her feelings and return to an actualizing state.

One of Rogers' most important contributions to psychology was his attempt to evaluate this method of therapy. Rogers and Dymond (1954) set out to examine changes in the discrepancy between present self-concept and the ideal self (the person the client would like to be). This was done using a Q-sort technique (devised by Stephenson, 1953), whereby the client is given a range of cards on which there is a descriptive statement, such as: 'I don't trust my own emotions' and 'I have a warm emotional relationship with others.'

The client is asked to sort these cards in order, from 'most like me' to 'least like me' under the headings 'Self' and 'Ideal'. From this, Rogers and Dymond produced a numerical discrepancy between real and ideal self. By administering the Q-sort at different times during therapy, the effectiveness of the therapy sessions can be assessed.

PSYCHODYNAMIC THEORIES OF PERSONALITY: THE ROLE OF THE UNCONSCIOUS

One of the most important psychological approaches to understanding personality is based on the theorizing of the Austrian physician and psychologist Sigmund Freud (1856–1939), who founded what today is known as the **psychodynamic approach,** *an approach to understanding human behavior that focuses on the role of unconscious thoughts, feelings, and memories*. Many people know about Freud because his work has had a huge impact on our everyday thinking about psychology, and the psychodynamic approach is one of the most important approaches to psychological therapy (Roudinesco, 2003; Taylor, 2009). Freud is

probably the best known of all psychologists, in part because of his impressive observation and analyses of personality (there are 24 volumes of his writings). As is true of all theories, many of Freud's ingenious ideas have turned out to be at least partially incorrect, and yet other aspects of his theories are still influencing psychology.

Freud was influenced by the work of the French neurologist Jean-Martin Charcot (1825-1893), who had been interviewing patients (almost all women) who were experiencing what was at the time known as *hysteria*. Although it is no longer used to describe a psychological disorder, **hysteria** at the time *referred to a set of personality and physical symptoms that included chronic pain, fainting, seizures, and paralysis*. Charcot could find no biological reason for the symptoms. For instance, some women experienced a loss of feeling in their hands and yet not in their arms, and this seemed impossible given that the nerves in the arms are the same as those in the hands. Charcot was experimenting with the use of hypnosis, and he and Freud found that under hypnosis many of the hysterical patients reported having experienced a traumatic sexual experience, such as sexual abuse, as children (Dolnick, 1998). Freud and Charcot also found that during hypnosis the remembering of the trauma was often accompanied by an *outpouring of emotion*, known as **catharsis**, and that following the catharsis the patient's symptoms were frequently reduced in severity. These observations led Freud and Charcot to conclude that these disorders were caused by psychological rather than physiological factors.

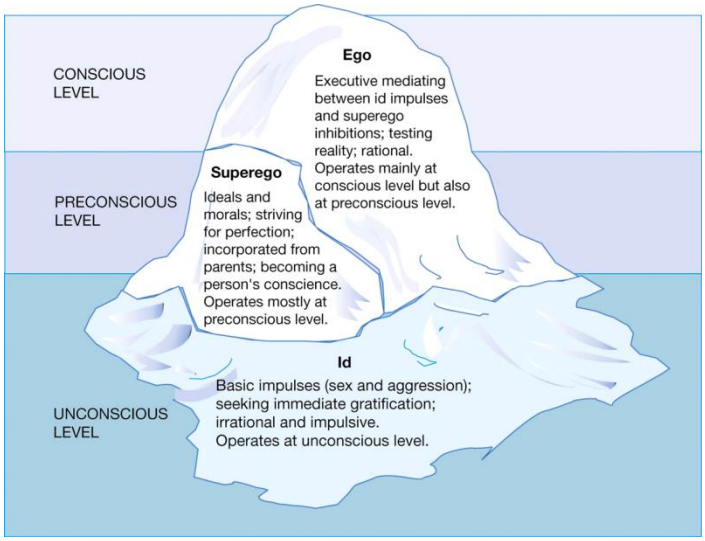
Freud used the observations that he and Charcot had made to develop his theory regarding the sources of personality and behavior, and his insights are central to the fundamental themes of psychology. In terms of free will, Freud did not believe that we were able to control our own behaviors. Rather, he believed that all behaviors are predetermined by motivations that lie outside our awareness, in the unconscious. These forces show themselves in our dreams, in neurotic symptoms such as obsessions, while we are under hypnosis, and in Freudian "slips of the tongue" in which people reveal their unconscious desires in language. Freud argued that we rarely understand why we do what we do, although we can make up explanations for our behaviors after the fact.

Id, Ego, and Superego

Freud proposed that the mind is divided into three components: *id*, *ego*, and *superego*, and that the interactions and conflicts among the components create personality (Freud, 1923/1949). According to Freudian theory, the **id** is *the component of personality that forms the basis of our most primitive impulses*. The id is entirely unconscious, and it drives our most important motivations, including the sexual drive (*libido*) and the aggressive or destructive drive (*Thanatos*). According to Freud, the id is driven by the **pleasure principle** — *the desire for immediate gratification of our sexual and aggressive urges*. The id is why we smoke cigarettes, drink alcohol, view pornography, tell mean jokes about people, and engage in other fun or harmful behaviors, often at the cost of doing more productive activities.

In stark contrast to the id, the superego represents *our sense of morality and oughts*. The superego tell us all the things that we shouldn't do, or the duties and obligations of society. The superego strives for perfection, and when we fail to live up to its demands we feel guilty.

In contrast to the id, which is about the pleasure principle, the function of the *ego* is based on the **reality principle** — *the idea that we must delay gratification of our basic motivations until the appropriate time with the appropriate outlet.* The **ego** is *the largely conscious controller or decision-maker of personality*. The ego serves as the intermediary between the desires of the id and the constraints of society contained in the superego. We may wish to scream, yell, or hit, and yet our ego normally tells us to wait, reflect, and choose a more appropriate response.



Freud believed that psychological disorders, and particularly the experience of anxiety, occur when there is conflict or imbalance among the motivations of the id, ego, and superego. When the ego finds that the id is pressing too hard for immediate pleasure, it attempts to correct for this problem, often through the use of **defence mechanisms** — *unconscious psychological strategies used to cope with anxiety and maintain a positive self-image*. Freud believed that the defence mechanisms were essential for effective coping with everyday life, but that any of them could be overused ("The Major Freudian Defence Mechanisms").

Defence mechanism	Definition	Possible behavioural example
Displacement	Diverting threatening impulses away from the source of the anxiety and toward a more acceptable source	A student who is angry at her professor for a low grade lashes out at her roommate, who is a safer target of her anger.
Projection	Disguising threatening impulses by attributing them to others	A man with powerful unconscious sexual desires for women claims that women use him as a sex object.
Rationalization	Generating self-justifying explanations for our negative behaviours	A drama student convinces herself that getting the part in the play wasn't that important after all.
Reaction formation	Making unacceptable motivations appear as their exact opposite	Jane is sexually attracted to friend Jake, but she claims in public that she intensely dislikes him.
Regression	Retreating to an earlier, more childlike, and safer stage of development	A university student who is worried about an important test begins to suck on his finger.
Repression (or denial)	Pushing anxiety-arousing thoughts into the unconscious	A person who witnesses his parents having sex is later unable to remember anything about the event.
Sublimation	Channeling unacceptable sexual or aggressive desires into acceptable activities	A person participates in sports to sublimate aggressive drives. A person creates music or art to sublimate sexual drives.

The Major Freudian Defense Mechanisms

The most controversial, and least scientifically valid, part of Freudian theory is its explanations of personality development. Freud argued that personality is developed through a series of *psychosexual stages*, each focusing on pleasure from a different part of the body (Table,

"Freud's Stages of Psychosexual Development"). Freud believed that sexuality begins in infancy, and that the appropriate resolution of each stage has implications for later personality development.

Stage	Approximate ages	Description
Oral	Birth to 18 months	Pleasure comes from the mouth in the form of sucking, biting, and chewing.
Anal	18 months to 3 years	Pleasure comes from bowel and bladder elimination and the constraints of toilet training.
Phallic	3 years to 6 years	Pleasure comes from the genitals, and the conflict is with sexual desires for the opposite-sex parent.
Latency	6 years to puberty	Sexual feelings are less important.
Genital	Puberty and older	If prior stages have been properly reached, mature sexual orientation develops.

Very Short Questions (One sentence)

1. **The Id-** is the original source of personality, present in the newborn infant, from which the ego and super ego later develop.
2. **The ego-** develops out of Id because of the necessity for dealing with the real world. The ego's task is to hold the Id in check until conditions allow for satisfaction of its impulses.
3. **Self-Actualization-**It is a state which people have reached their own fullest potential.
4. **Social Desirability:** It is a tendency on part of the respondent to endorse items in a socially desirable manner.
5. **Projective Techniques—** Developed to assess unconscious motives, feelings and conflicts.
6. **Self-reinforcement-** It involves rewarding behaviours that have pleasant outcomes (like going to see a-movie with friends if we do well in exams).
7. **Persona-** The word 'personality' is derived from the Latin word 'persona', which means a mask or false face which Greek actors used to wear when acting on stage.
8. **Observation of Own Behaviour-** it provides us with necessary information that may be used to change, modify, or strengthen certain concepts of self. '
9. A limitation of selective breeding studies is that they cannot:-be used to study human beings.
10. Which Neo-Freudian challenged his ideas about penis envy?-Horney

Short Questions (100-120 words)

1. Define Personality.

Personality is made up of the characteristic patterns of thoughts, feelings, and behaviors that make a person unique.

2. What are Personality traits?

A distinguishing quality or characteristic, typically one belonging to a person.

3. What are the Jung's Personality types?

Extraversion: Extraversion (also spelled as extroversion) is the state of primarily obtaining gratification from outside oneself. Extraverts tend to enjoy human interactions and to be

enthusiastic, talkative, assertive, and gregarious. Extraverts are energized and thrive off being around other people.

Introversion: Introversion is a basic personality style characterized by a preference for subdued and solitary experiences.

4. What are the projective Tests of Personality?

In psychology, a projective test is a personality test designed to let a person respond to ambiguous stimuli, presumably revealing hidden emotions and internal conflicts projected by the person into the test.

5. What are the objective tests of personality?

An objective test is a psychological test that measures an individual's characteristics in a way that isn't influenced by the examiner's own beliefs; in this way, they are said to be independent of rater bias. They usually involve the administration of a bank of questions that are marked and compared against standardized scoring mechanisms

6. What stands for MMPI?

Minnesota Multiphasic Personality Inventory. This test was developed by Hathaway and Mckinely. It has been found very effective in detecting psycho-pathology like hypochondriasis, depression, hysteria etc.

7. Write two ways of grooming personality.

1. Self-Awareness: One must know his/her own strengths and weaknesses in order to further work on them.

2. Role models: Not just be inspired by people but also adopt effective behaviors from them.

8. What do you understand by Defense Mechanism. (Refer to page no. 119)

9. Briefly explain the Concept of Gunas.

The Indian approach to personality emphasizes on the combination of three qualities namely, Sattva, Rajas and Tamas. These qualities or Gunas have been discussed in detail in the Samkhya Theory. Bhagavad-Gita has provided an account of these gunas. These gunas are present in different degrees and at any point of time one or the other may dominate. The behavior of a person depends on the guna that is dominating a person at any point of time. A brief description of these gunas is given below.

- **Sattva Guna:** The main attributes which characterize Sattva guna are truth, gravity, duty, discipline, detachment, cleanliness, mental balance, sense of control, determination and sharp intelligence.
- **Rajas Guna:** A person dominated by Rajas guna has attributes that include vigorous activity, desire for sense gratification, dissatisfaction, envy and materialistic point of view.
- **Tamas Guna:** It involves anger, arrogance, mental imbalance, depression, laziness, procrastination and a feeling of helplessness. Bhagavad-Gita views the three gunas in a prototypical form and describes that the food which we eat, mentality (Buddhi), Charity (Dan) etc. can also be categorized in the three types of gunas or qualities.

10. **Discuss the Social Cognitive Perspective.**

This perspective was developed by Albert Bandura. It views behavior as influenced by the interaction between persons and the social context. It is proposed that our thoughts and actions originate in the social world but it is essential to note that human beings have capacity for self-regulation and engage in active cognitive processes. Bandura developed the concept of self-efficacy which incorporates a person's cognitive skills, abilities and attitudes as represented in one's self-system. Self-efficacy indicates the degree to which one is convinced of the abilities and effectiveness in meeting the demands of a particular situation. The theory is based on

laboratory research. However, the theory ignores the unconscious factors which may influence behavior. The theory also emphasizes the rational side of life while ignoring the emotional side. The cognitive-social theory brings into focus the role of thought and memory in personality. We often find that the expectations and skills learned by people are very important in determining behaviors.

11. Explain Bhagwad Gita & Personality.

Bhagavad Geeta divides human personalities into three according to three guna prakriti-Satva Rajas and Tamas. All these are present in the same. Satvika personality does all his actions in dharmic way without desire and expecting returns (phala apeksha), without thinking about victory or failure, Rajasika personality desires for result and fame They do even tapas yajna and even good deeds with desire. They are emotional and carried by victory and defeat. Tamasika personality is not concerned with others. They are ignorant, think in opposite way and disturb others Bhattanayaka in his Sankhya study says. Satva rajas tamo gunas create sukh or happinesss, dukh or sorrow and moha. But the more powerful mind determines one's personality. Bhagavad Gita seeks to bring a personality in a human being that is perfect from all aspects.

Long/Extensive Questions (3 to 5 pages):

1. Define Personality. Explain the types of personality proposed by Carl Jung. (Refer to page no. 113, 114, and anwer of Short Q-3))

2. Discuss the Strengths and Limitations of Freudian and Neo-Freudian Approaches.

Freud has probably exerted a greater impact on the public's understanding of personality than any other thinker, and he has also in large part defined the field of psychology. Although Freudian psychologists no longer talk about oral, anal, or genital fixations, they do continue to believe that our childhood experiences and unconscious motivations shape our personalities and our attachments with others, and they still make use of psychodynamic concepts when they conduct psychological therapy.

Nevertheless, Freud's theories, as well as those of the neo-Freudians, have in many cases failed to pass the test of empiricism, and as a result they are less influential now than they have been in the past (Crews, 1998). The problems are, first, that it has proved to be difficult to rigorously test Freudian theory because the predictions that it makes (particularly those regarding defence mechanisms) are often vague and unfalsifiable and, second, that the aspects of the theory that can be tested often have not received much empirical support.

As examples, although Freud claimed that children exposed to overly harsh toilet training would become fixated in the anal stage and thus be prone to excessive neatness, stinginess, and stubbornness in adulthood, research has found few reliable associations between toilet training practices and adult personality (Fisher & Greenberg, 1996). And since the time of Freud, the need to repress sexual desires would seem to have become much less necessary as societies have tolerated a wider variety of sexual practices. And yet the psychological disorders that Freud thought we caused by this repression have not decreased.

There is also little scientific support for most of the Freudian defence mechanisms. For example, studies have failed to yield evidence for the existence of repression. People who are exposed to traumatic experiences in war have been found to remember their traumas only too

well (Kihlstrom, 1997). Although we may attempt to push information that is anxiety-arousing into our unconscious, this often has the ironic effect of making us think about the information even more strongly than if we hadn't tried to repress it (Newman, Duff, & Baumeister, 1997). It is true that children remember little of their childhood experiences, but this seems to be true of both negative as well as positive experiences, is true for animals as well, and probably is better explained in terms of the brain's inability to form long-term memories than in terms of repression. On the other hand, Freud's important idea that expressing or talking through one's difficulties can be psychologically helpful has been supported in current research (Baddeley & Pennebaker, 2009) and has become a mainstay of psychological therapy.

A particular problem for testing Freudian theories is that almost anything that conflicts with a prediction based in Freudian theory can be explained away in terms of the use of a defence mechanism. A man who expresses a lot of anger toward his father may be seen via Freudian theory to be experiencing the Oedipus complex, which includes conflict with the father. But a man who expresses no anger at all toward the father also may be seen as experiencing the Oedipus complex by repressing the anger. Because Freud hypothesized that either was possible, but did not specify when repression would or would not occur, the theory is difficult to falsify.

Taken together, it is fair to say that Freudian theory, like most psychological theories, was not entirely correct and that it has had to be modified over time as the results of new studies have become available. But the fundamental ideas about personality that Freud proposed, as well as the use of talk therapy as an essential component of therapy, are nevertheless still a major part of psychology and are used by clinical psychologists every day.

3. Explain Freud's stages of psychosexual development in detail.

In the first of Freud's proposed stages of psychosexual development, which begins at birth and lasts until about 18 months of age, the focus is on the mouth. During this **oral stage**, the infant obtains sexual pleasure by sucking and drinking. Infants who receive either too little or too much gratification become fixated or locked in the oral stage, and are likely to regress to these points of fixation under stress, even as adults. According to Freud, a child who receives too little oral gratification (e.g., who was underfed or neglected) will become orally dependent as an adult and be likely to manipulate others to fulfill his or her needs rather than becoming independent. On the other hand, the child who was overfed or overly gratified will resist growing up and try to return to the prior state of dependency by acting helpless, demanding satisfaction from others, and acting in a needy way.

The **anal stage**, lasting from about 18 months to three years of age, is when children first experience psychological conflict. During this stage children desire to experience pleasure through bowel movements, but they are also being toilet trained to delay this gratification. Freud believed that if this toilet training was either too harsh or too lenient, children would become fixated in the anal stage and become likely to regress to this stage under stress as adults. If the child received too little anal gratification (i.e., if the parents had been very harsh about toilet training), the adult personality will be **anal retentive** — stingy, with a compulsive seeking of order and tidiness. On the other hand, if the parents had been too lenient, the **anal expulsive** personality results, characterized by a lack of self-control and a tendency toward messiness and carelessness.

The **phallic stage**, which lasts from age three to age six is when the penis (for boys) and clitoris (for girls) become the primary erogenous zone for sexual pleasure. During this stage, Freud believed that children develop a powerful but unconscious attraction for the opposite-sex parent, as well as a desire to eliminate the same-sex parent as a rival. Freud based his theory of sexual development in boys (**the Oedipus complex**) on the Greek mythological character Oedipus, who unknowingly killed his father and married his mother, and then put his own eyes out when he learned what he had done. Freud argued that boys will normally eventually abandon their love of the mother, and instead identify with the father, also taking on the father's personality characteristics, but that boys who do not successfully resolve the Oedipus complex will experience psychological problems later in life. Although it was not as important in Freud's theorizing, in girls the phallic stage is often termed the **Electra complex**, after the Greek character who avenged her father's murder by killing her mother. Freud believed that girls frequently experienced **penis envy**, the sense of deprivation supposedly experienced by girls because they do not have a penis.

The **latency stage** is a period of relative calm that lasts from about six years to 12 years. During this time, Freud believed that sexual impulses were repressed, leading boys and girls to have little or no interest in members of the opposite sex.

The fifth and last stage, the **genital stage**, begins about 12 years of age and lasts into adulthood. According to Freud, sexual impulses return during this time frame, and if development has proceeded normally to this point, the child is able to move into the development of mature romantic relationships. But if earlier problems have not been appropriately resolved, difficulties with establishing intimate love attachments are likely.

4. Explain Freud's Followers as The Neo-Freudians in detail.

Freudian theory was so popular that it led to a number of followers, including many of Freud's own students, who developed, modified, and expanded his theories. Taken together, these approaches are known as Neo-Freudian theories. **The Neo-Freudian theories** are theories based on Freudian principles that emphasize the role of the unconscious and early experience in shaping personality but place less evidence on sexuality as the primary motivating force in personality and are more optimistic concerning the prospects for personality growth and change in personality in adults.

Alfred Adler (1870-1937) was a follower of Freud's who developed his own interpretation of Freudian theory. Adler proposed that the primary motivation in human personality was not sex or aggression, but rather the striving for superiority. According to Adler, we desire to be better than others and we accomplish this goal by creating a unique and valuable life. We may attempt to satisfy our need for superiority through our school or professional accomplishments, or by our enjoyment of music, athletics, or other activities that seem important to us.

Adler believed that psychological disorders begin in early childhood. He argued that children who are either overly nurtured or overly neglected by their parents are later likely to develop an **inferiority complex** — a psychological state in which people feel that they are not living up to expectations, leading them to have low self-esteem, with a tendency to try to overcompensate for the negative feelings. People with an inferiority complex often attempt to demonstrate their superiority to others at all costs, even if it means humiliating, dominating, or alienating them. According to Adler, most psychological disorders result from misguided attempts to compensate for the inferiority complex in order meet the goal of superiority.

Carl Jung (1875-1961) was another student of Freud's who developed his own theories about personality. Jung agreed with Freud about the power of the unconscious but felt that Freud overemphasized the importance of sexuality. Jung argued that in addition to the personal unconscious, there was also a **collective unconscious**, or a collection of shared ancestral memories. Jung believed that the collective unconscious contains a variety of **archetypes**, or cross-culturally universal symbols, which explain the similarities among people in their emotional reactions to many stimuli. Important archetypes include the mother, the goddess, the hero, and the mandala or circle, which Jung believed symbolized a desire for wholeness or unity. For Jung, the underlying motivation that guides successful personality is **self-realization**, or learning about and developing the self to the fullest possible extent.

Karen Horney (the last syllable of her last name rhymes with "eye"; 1855-1952) was a German physician who applied Freudian theories to create a personality theory that she thought was more balanced between men and women. Horney believed that parts of Freudian theory, and particularly the ideas of the Oedipus complex and penis envy, were biased against women. Horney argued that women's sense of inferiority was not due to their lack of a penis but rather to their dependency on men, an approach that the culture made it difficult for them to break from. For Horney, the underlying motivation that guides personality development is the desire for security, the ability to develop appropriate and supportive relationships with others.

Another important neo-Freudian was Erich Fromm (1900-1980). Fromm's focus was on the negative impact of technology, arguing that the increases in its use have led people to feel increasingly isolated from others. Fromm believed that the independence that technology brings us also creates the need to "escape from freedom," that is, to become closer to others.

5. Discuss Early Philosophical Roots of Personality.

The word "personality" originates from the Latin word *persona,* which means "mask." Personality as a field of study began with Hippocrates, a physician in ancient Greece, who theorized that personality traits and human behaviors are based on four separate temperaments associated with four fluids of the body known as "humors". This theory, known as humorism, proposed that an individual's personality was the result of the balance of these humors (yellow bile, black bile, phlegm, and blood), which corresponded to four dispositions (grumpy, melancholy, calm, and cheer, respectively). While this theory is no longer held to be true, it paved the way for further discoveries and insight into human personality.

Interestingly, several words in the English language that describe personality traits are rooted in humorism: "bilious" means bad-tempered, which is rooted in humorists' thought that yellow bile was associated with grumpiness; "melancholic" is from the Greek words for "black bile," again rooted in humorists' thought that black bile was associated with depression. Similarly, "phlegmatic" describes a calm personality and "sanguine" (from the Latin for "blood") a cheerful or playful one.

A great deal of modern personality psychology is influenced by, and attempts to answer, the following five philosophical questions about what really determines personality:

1. **Freedom versus determinism:** How much, if any, of an individual's personality is under their conscious control?
2. **Heredity versus environment:** Do internal (biological) or external (environmental) influences play a larger role in determining personality?

3. **Uniqueness versus universality:** Are individuals generally more alike (similar to each other) or different (unique) in nature?
4. **Active versus reactive:** Is human behavior passively shaped by environmental factors, or are humans more active in this role?
5. **Optimistic versus pessimistic:** Are humans integral in the changing of their own personalities (for instance, can they learn and change through human interaction and intervention)?

6. Explain Measures of Personality Assessment.

- **The Subjective Methods:**
  The Subjective Methods are those in which the individual is permitted to disclose what he knows about himself as an object of observation. They are based on what the subject himself has to say about his traits, attitudes, personal experiences, aims, needs and interests.

- **The Objective Methods:**
  The Objective Methods do not depend on the subject's own statements about himself but on his overt behavior as revealed to others who serve as observers, examiners or judges. The subject, as far as possible, is observed or studied in certain life situations where his particular traits, habits, needs and other characteristics are brought into play and can thus be observed directly by the examiner. Some of the objective methods are miniature life situations, unobserved observation, physiological measures and rating scales.

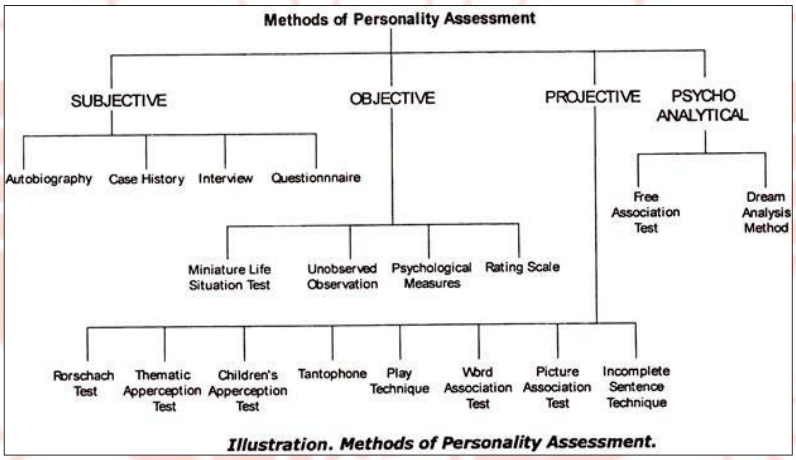


Illustration. Methods of Personality Assessment.

- **The Projective Methods:**
  In these methods or techniques, the examiner does not observe the overt behavior of the subject as in miniature life situations; nor does he ask the subject to state his opinion of his own behavior or his feeling about certain experiences. Instead, the subject is requested to behave in an imaginative way i.e., by making up a story, interpreting ink-blots or constructing some objects out of plastic material and drawing what he wants.

  Thus, the subject is encouraged to 'project' or throw his thoughts, emotions, wishes and other reactions freely in some situations which are provided. These methods are, thus, intend to reveal the underlying traits, moods, attitudes and fantasies that determine the behavior of the individual in actual situations. The assumption that underlies the use of projective method is that in what he perceives in his unstructured and indefinite environment and what he says about it, an individual is revealing his innermost characteristics or his personality.

- **Psycho-Analytic Method:**

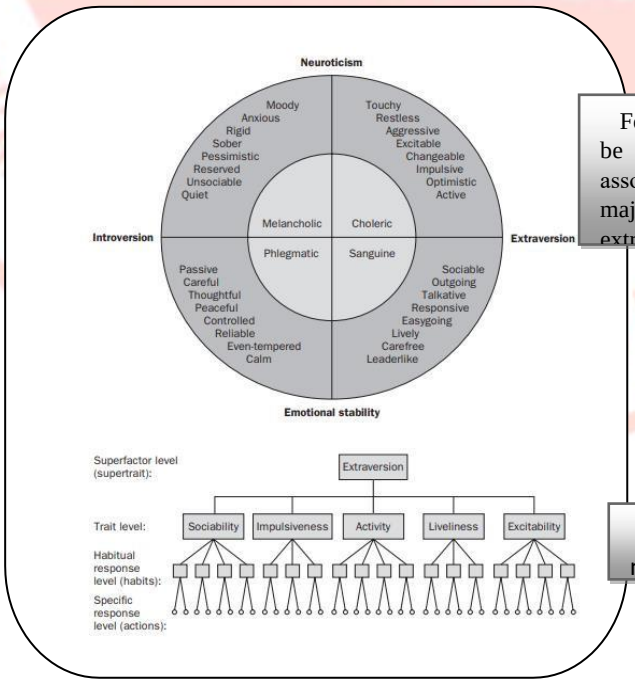
This method was propounded by Sigmund Freud, the father of the School of Psycho- analysis. **Two types of tests, in the Psycho-analytic method of investigation of Personality are very popular viz.:**

Free Association Test & Dream Analysis Method

Both these tests show the peculiarities of the Personality, in its unconscious aspect. In the dream analysis, the subject describes his dream and without using the mind, meaning thereby the unrestricted state of the mind associates freely the dream objects and activities.

7. Explain Eysenck's Super traits with Diagram.

Hans Eysenck (1916–97) was a contemporary of Cattell and also used factor analysis to classify personality traits. But Eysenck (1967) began with a theory of personality which he based on two supertraits – extraversion– introversion and neuroticism– stability. According to this theory, people who are highly extraverted are sociable and outgoing, and crave excitement and the company of others. People who are highly introverted are quiet and introspective; they tend to prefer time alone and to be cautious in the way they plan their lives. People who are highly neurotic tend to be anxious, moody and vulnerable, whereas people who are low on neuroticism tend to be stable, calm and even-tempered. Eysenck viewed the supertraits of extraversion and neuroticism as independent, and believed that different personalities arise from differing combinations of the two supertraits. The traits associated with Eysenck's two major personality dimensions (Eysenck, 1975). People who are high in both neuroticism and extraversion tend to exhibit quite different traits than someone who is low in both, or a combination of low and high. So people who are high on both extraversion and neuroticism tend to be touchy and aggressive, whereas people who are high on extraversion and low on neuroticism tend to be carefree and sociable.



Four personality types can be derived from the traits associated with Eysenck's two major personality ensions of extraversion and neuroticism

Eysenck's hierarchical model of personality.

A further super trait identified by Eysenck (1982) is psychoticism. People scoring high

on psychoticism are described as: 'egocentric, aggressive, impersonal, cold, lacking in empathy, impulsive, lacking in concern for others and generally unconcerned about the rights and welfare of other people'. Eysenck's (1967) hierarchical model divides personality into various units. This allows personality to be described at a number of different levels – super traits, traits, habits and actions. Each super trait is made up of a number of traits, which are in turn derived from habitual responses and specific responses (actions). According to this model, many specific actions make up habitual responses, which are represented as trait dimensions, which in turn are part of one super trait. All levels are important in determining behavior. Like Cattell, Eysenck developed a questionnaire designed to measure his super traits – the Eysenck Personality Questionnaire, or EPQ.

8. Explain different Approaches to Studying Personality in Brief.

Research into these five philosophical questions has branched into several different approaches to studying personality. The major theories include the psychodynamic, Neo-Freudian, learning (or behaviorist), humanistic, biological, trait (or dispositional), and cultural perspectives.

- **Psychodynamic theory**, originating with Sigmund Freud, posits that human behavior is the result of the interaction among various components of the mind (the id, ego, and superego) and that personality develops according to a series of psychosexual developmental stages.
- **Neo-Freudian theorists,** such as Adler, Erikson, Jung, and Horney, expanded on Freud's theories but focused more on the social environment and on the effects of culture on personality.
- **Learning theories,** such as behaviorism, regard an individuals' actions as ultimately being responses to external stimuli. Social learning theory believes that personality and behavior are determined by an individual's cognition about the world around them.
- **Humanistic theory** argues that an individual's subjective free will is the most important determinant of behavior. Humanistic psychologists such as Abraham Maslow and Carl Rogers believed that people strive to become self-actualized—the "best version" of themselves.
- **Biological approaches** focus on the role of genetics and the brain in shaping personality. Related to this, evolutionary theories explore how variation in individual personalities variance may be rooted in natural selection. The most common account of personality is frequently based on genetics. Proclamations like "He takes after his mother," or "She has her aunt's ear for music," indicate a genetic elucidation of personality. Bouchard (1984) studied identical twins parted at birth & reared apart & consistently found pronounced resemblance in their personalities even in absence of contact and different rearing styles by their families. Both the twin studies and adoption studies suggest a surprising outcome that family environmental influences have only a trivial role in development of personality. If children reared in the same family setup have similar personality characteristics that can be ascribed more to their common genes than to their shared family experiences. Evolutionary psychology stressed on the role of genetics and evolved adaptations in its elucidation of personality. All theories of personality are constructed on an inborn quality, like physiological needs (Freud, Skinner, Dollard and Miller, and Maslow); the tendency toward self-actualization (Jung, Horney, Rogers, and

Maslow) or social interest (Adler). Thus, the interrogation is around the degree and manner of genetic influence on personality.

- **Trait theorists** believe personality can be conceptualized as a set of common traits, or characteristic ways of behaving, that every individual exhibit to some degree. In this view, such personality traits are different from person to person but within an individual are stable over time and place. Numerous personality theorists consider that what separates individuals from each other are the traits and the needs they possess. Some traits are estimated to be learned (e.g., dietary preferences) while others are genetically determined (e.g., one's emotional makeup). Some exert an influential impact in one's life (e.g., intellect), and others have only a minor influence (e.g., fashion preferences). Traits an individual has continue to be fairly constant throughout one's life and, therefore, his behavior will tend to remain consistent across time and comparable situations. The theories of Allport, Cattell, Murray and the Big Five emphasize the significance of traits and needs in their elucidations of personality.
- **Humanistic-Existential theories** emphasize the significance of free will. Humans could be unnerved by situations outside their control into some situations of life, but how they value, construe and react to those conditions is personal choice. For instance, you might be born a poor or rich, male or a female, a Hindu or a Muslim. You could have been raised under loving conditions or been ill-treated as a child, no matter what circumstances you find yourself in or what experiences you have had, it is you who gives those environments or experiences meaning. The theories of Rogers, Maslow and May emphasize existential–humanistic considerations and suggest that it is the person is in charge of her life; therefore, she alone is accountable for the kind of individual she becomes.

9. **Explain the Abraham Maslow theory in detail.**

Abraham Maslow first introduced the concept of a hierarchy of needs in his 1943 paper, titled "A Theory of Human Motivation," and again in his subsequent book, "Motivation and Personality." This hierarchy suggests that people are motivated to fulfill basic needs before moving on to other, more advanced needs. Maslow's theory states that our actions are motivated by certain physiological and psychological needs that progress from basic to complex. As a humanist, Maslow believed that people have an inborn desire to be self-actualized, that is, to be all they can be. To achieve this ultimate goal, however, a number of more basic needs must be met. This includes the need for food, safety, love, and self-esteem.

Security and Safety Needs

At the second level of Maslow's hierarchy, the needs start to become a bit more complex. At this level, the needs for security and safety become primary.

Love and Belonging

The social needs in Maslow's hierarchy include love, acceptance, and belonging. At this level, the need for emotional relationships drives human behavior. Some of the things that satisfy this need include:

- Friendships
- Romantic attachments
- Family relationships
- Social groups

- Community groups
- Churches and religious organizations

Esteem Needs

At the fourth level in Maslow's hierarchy is the need for appreciation and respect. Once the needs at the bottom three levels have been satisfied, the esteem needs begin to play a more prominent role in motivating behavior. At this level, it becomes increasingly important to gain the respect and appreciation of others. People have a need to accomplish things, then have their efforts recognized. In addition to the need for feelings of accomplishment and prestige, esteem needs include such things as self-esteem and personal worth. People need to sense that they are valued by others and feel that they are making a contribution to the world. Participation in professional activities, academic accomplishments, athletic or team participation, and personal hobbies can all play a role in fulfilling the esteem needs. People who are able to satisfy esteem needs by achieving good self-esteem and the recognition of others tend to feel confident in their abilities. Conversely, those who lack self-esteem and the respect of others can develop feelings of inferiority.

Self-Actualization Needs

At the very peak of Maslow's hierarchy are the self-actualization needs. Self-actualizing people are self-aware, concerned with personal growth, less concerned with the opinions of others, and interested in fulfilling their potential. "What a man can be, he must be," Maslow explained, referring to the need people have to achieve their full potential as human beings. Maslow's said of self-actualization: "It may be loosely described as the full use and exploitation of talents, capabilities, potentialities, etc. Such people seem to be fulfilling themselves and to be doing the best that they are capable of doing. They are people who have developed or are developing to the full stature of which they capable."

9. What are the different projective tests to assess personality? Explain in detail. (Refer to answer of Q6 above)

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UNIT VII

UNIT VII	Motivation: Nature and Concept (Needs, Drives, Instincts); Types of Motives: Biological and Social Motives; Pull and Push Mechanism; Intrinsic Motivation.

The concept of motivation focuses on explaining what **"moves"** behavior. In fact, the term motivation is derived from the Latin word **'movere'**, referring to movement of activity. Motives also help in making predictions about behavior. A person will work hard in school, in sports, in business, in music, and in many other situations, if s/he has a very strong need for achievement. Hence, motives are the general states that enable us to make predictions about behavior in many different situations. In other words, motivation is one of the determinants of behavior. Instincts, drives, needs, goals, and incentives come under the broad cluster of motivation. The Motivational Cycle Psychologists now use the concept of need to describe the motivational properties of behavior. A need is lack or deficit of some necessity. The condition of need leads to drive.

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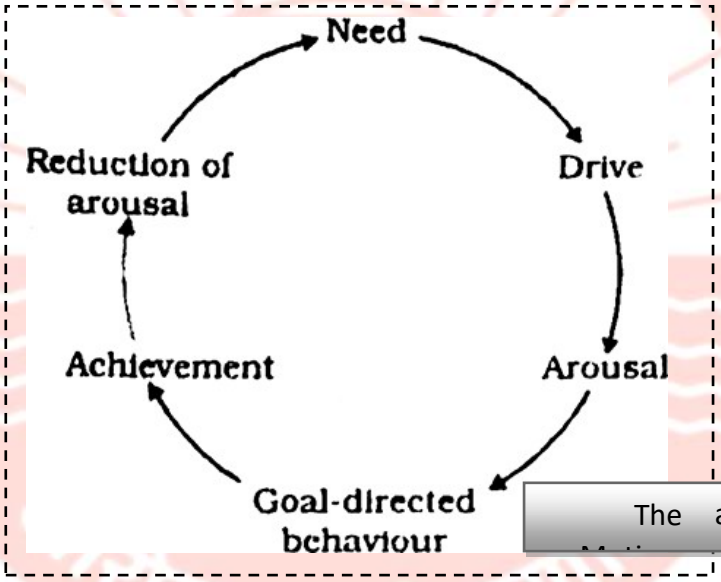


The ational Cycle

Instinct refers to the inborn patterns of behavior that are biologically determined rather than learned. Motivation, according to Freud, is innate. Suppose a child cries when he is hungry- no one teaches the baby to cry but it is its inborn instinct which made him to cry. McDougall is the first person who suggested that there are 18 instincts in human beings but later on Bernard claimed that there are 5,759 instincts in human beings.

Need is lack or deficit of some necessity. It's a state of physical deprivation that causes tension within an organism. The tension caused when the organism is deprived of basic necessities of life as food, water, and sleep, causes the internal environment of an organism to be imbalanced. The imbalance caused by the need arouses the organism to maintain its balance. For any goal directed behavior, need is the first condition or stimulating factor.

Need leads to drive, which is the second step towards achieving goal.

Drive can be defined as the state of tension or arousal produced by need. The drive can also be considered as the original source of energy that activates an organism. For instance, when an organism is hungry and/or thirsty, the organism seeks to reduce this drive by eating and/or drinking. Drive acts as a strong persistent stimulus to push an organism towards its goal. It is the state of heightened tension leading to restless activity and preparatory behavior.

The object of the environment that activates, directs, and maintains behavior is called **Incentive**. It can be anything as long as it has either positive or negative value in motivating behavior. The incentive theory rests on the assumption that the behaving organism is well aware of his actions and the consequences received as a result. The theory also understands incentives as the motivation, which a person has to achieve any particular goal object. The motivated behavior is directed towards incentive and getting closer to the incentive provides satisfaction of the aroused drive.

The reduction of tension in the body can be considered as the goal of any motivated behavior. Let's go back to the example of a hungry man. A hungry man eats food, and his body restores to a balanced condition. This then reduces the tension. This reduction of tension as a result of an energized activity is called goal. Once the goal has been completed, the organism is again ready for another **Goal-motivated behavior.** Goals might be both positive or negative. Positive goals are the ones that an organism tries to attain, such as sexual companionship, food, victory etc. negative goals are the ones that an organism tries to escape from or avoid, such as embarrassing situations, punishments.

These four steps continue on and on throughout the life-course of an organism. Because the needs are never ending, it leads to drive, which then lead to incentive and the goal.

A motive is an inclination or impulsion to action plus some degree of orientation or direction. It is generated through basic needs or drives. It is a goal directed activity pursued till the attainment of goal. - **Fischer**

A need gives rise to one or more motives. A motive is a rather specific process which has been learned. It is directed toward a goal. Motive is an inner state of mind or an aroused feeling. Generalized through basic needs or drive**. - Caroll**

Classification of Motives: There are two types of motives: primary motives and secondary motives.

1. **Primary Motives:** These needs are associated with the biological or physiological well-being of an individual. Often it is called as biological motives. Examples for the biological motives are hunger, sex, thirst and etc. Biological motives are universal. It is basic for all living organism. It is innate and inborn.

Hunger Motive & Motivation: The motivation to obtain and consume food .Need for food is the basis of this motive. The longer we are deprived of food the intensity of motive is high. Considering the physiological basis of hunger it

was thought that hunger pangs are taken as hunger signal. It is quite misleading because the symptoms may be produced on account of temporal conditioning caused by eating about the same every day. Hypothalamus, liver, smell, taste, sight of food along with cognitive factors together helps in eating.

It is the motivation to obtain and consume food. The hypothalamus plays an important role in both eating and satiety (feeling of fullness). Hunger is now known to be regulated on a short-term basis by two clusters of cells (called nuclei) in the hypothalamus of the brain, the ventromedial hypothalamic (VMH) and the lateral hypothalamic (LH) nuclei. The stimuli for hunger include stomach contractions, which signify that the stomach is empty, a low concentration of glucose in the blood, a low level of protein and the amount of fats stored in the body. The liver also responds to the lack of bodily fuel by sending nerve impulses to the brain. The aroma, taste or appearance of food may also result in a desire to eat. It may be noted that none of these alone gives you the feeling that you are hungry. All in combination act with external factors (such as taste, colour, by observing others eating, and the smell of food, etc.) to help you understand that you are hungry. Thus, it can be said that our food intake is regulated by a complex feeding satiety system located in the hypothalamus, liver, and other parts of the body as well as the external cues available in the environment. Lesioning (destruction) produces effects on motivated behavior that are opposite those produced by electrical stimulation of the same nucleus. Damage to a rat's LH causes the rat to stop eating (become aphagic) and eventually starve to death even with an abundance of food. Electrical stimulation of the LH, however, causes it to eat. Conversely, damage to a rat's VMH causes it to overeat (become hyperphagic). (If an adult female rat of a species weighs 350 grams, a hyperphagic rat of the same species can weigh over 1,000 grams.) Electrical stimulation in the same VMH nucleus produces cessation of eating. Other changes can also affect hunger, such as changes in glucose (blood sugar) and hormone levels. For example, the hormone insulin diminishes the blood glucose level, producing hunger and thus increasing eating behavior. In addition, external cues may affect eating behavior, for example, the sight or aroma of food or the sight of other people eating.

Thirst Motive: This motive arises out of the need of quenching ones thirst. It's stronger than hunger motive as we can live longer without food than that of water. In case of this motive, the apparent signals come from the sensations of dryness from the mouth and the throat.

Sex Motive: Motivation to engage in various forms of sexual activity .It is highly powerful psycho-physical motive. Its satisfaction results in immense happiness and wellbeing to an individual and as a medium of survival of species .Therefore human sex motive is a complex blend of innate as well as acquired tendencies. Gonads, testes, ovaries, chemicals like amphetamines etc. plays role in regulating this motive.

One of the most powerful drives in both animals and human beings is the sex drive. Motivation to engage in sexual activity is a very strong factor influencing human behavior. However, sex is far more than a biological motive. It is

different from other primary motives (hunger, thirst) in many ways like, (a) sexual activity is not necessary for an individual's survival; (b) homeostasis (the tendency of the organism as a whole to maintain constancy or to attempt to restore equilibrium if constancy is disturbed) is not the goal of sexual activity; and (c) sex drive develops with age, etc. In case of lower animals, it depends on many physiological conditions; in case of human beings, the sex drive is very closely regulated biologically, sometimes it is very difficult to classify sex purely as a biological drive. Physiologists suggest that intensity of the sexual urge is dependent upon chemical substances circulating in the blood, known as sex hormones. Studies on animals as well as human beings have mentioned that sex hormones secreted by gonads, i.e. testes in males and the ovaries in females are responsible for sexual motivation. Sexual motivation is also influenced by other endocrine glands, such as adrenal and pituitary glands. Sexual drive in human beings is primarily stimulated by external stimuli and its expression depends upon cultural learning.\

Master and Johnson's stages (EPOR) of sexual activity:
1) **Excitement phase:** It involves physiological changes indicative of grow in sexual excitement. Eg: Penis and clitoris become enlarged and vaginal lubrication increases.
2) **Plateau phase:** In this phase, the size of the penis increases till further, and the outer third of the vagina become encroached with blood reducing its diameter.
3) **Orgasmic phase:** It consists of several contractions of the muscles surrounding the genitals along with intense sensations of pleasure.
4)**Resolution phase:** In males orgasm is followed by a reduction in sexual and physiological arousal. Among females either the may experience reduction in sexual and physiological arousal, or stimulation occurs women may experience additional orgasms.

2. Secondary Motives: It is linked with one's socio-psychological needs and it is called psychological or sociological motives. Examples of these motives are achievement motive, affiliation motive, power motive, aggressive motivation etc. Social motives are mostly learned or acquired. Social groups such as family, neighborhood, friends, and relatives do contribute a lot in acquiring social motives. These are complex forms of motives mainly resulting from the individual's interaction with her/his social environment.

I. **Need for Affiliation** -Most of us need company or friend or want to maintain some form of relationship with others. Nobody likes to remain alone all the time. As soon as people see some kinds of similarities among themselves or they like each other, they form a group. Formation of group or collectivity is an important feature of human life. Often people try desperately to get close to other people, to seek their help, and to become members of their group. Seeking other human beings and wanting to be close to them both physically and psychologically is called affiliation. It involves motivation for social contact. Need for affiliation is aroused when individuals feel threatened or helpless and also when they are happy. People high on this need are motivated to seek the company of others and to maintain friendly relationships with other people.

II. **Need for Power-**Need for power is an ability of a person to produce intended effects on the behavior and emotions of another person. The various goals of power motivation are to influence, control, persuade, lead, and charm others and most importantly to enhance one's own reputation in the eyes of other people. David McClelland (1975) described four general ways of expression of the power motive. First, people do things to gain feeling of power and strength from sources outside themselves by reading stories about sports stars or attaching themselves to a popular figure. Second, power can also be felt from sources within us and may be expressed by building up the body and mastering urges and impulses. Third, people do things as individuals to have an impact on others. For example, a person argues, or competes with another individual in order to have an impact or influence on that person. Fourth, people do things as members of organisations to have an impact on others as in the case of the leader of a political party; the individual may use the party apparatus to influence others. However, for any individual, one of these ways of expressing power motivation may dominate, but with age and life experiences, it varies.

III. **Need for Achievement-** You might have observed some students work very hard and compete with others for good marks/grades in the examination, as good marks/grades will create opportunities for higher studies and better job prospects. It is the achievement motivation, which refers to the desire of a person to meet standards of excellence. Need for achievement, also known as n-Ach, energises and directs behavior as well as influences the perception of situations. During the formative years of social development, children acquire achievement motivation. The sources from which they learn it, include parents, other role models, and socio-cultural influences. Persons high in achievement motivation tend to prefer tasks that are moderately difficult and challenging. They have stronger-than-average desire for feedback on their performance, that is to know how they are doing, so that they can adjust their goals to meet the challenge. Through his research, McClelland identified the following characteristics of high need achievers:

1. High-need achievers have a strong desire to assume personal responsibilities for performing a task or finding a solution to a problem.
2. **High need achievers tend to set moderately difficult goals and take calculated risks?**
3. High need achievers have a strong desire for performance feedback
4. **They have need for achievement for attaining personal accomplishment.**
5. They look for challenging tasks.

The Thematic Apperception Test, or TAT, is a projective measure intended to evaluate a person's patterns of thought, attitudes, observational capacity, and emotional responses to ambiguous test materials. In the case of the TAT, the ambiguous materials consist of a set of cards that portray human figures in a variety of settings and situations. The subject is asked to tell the examiner a story about each card that includes the following elements: the event shown in the picture; what has led up to it; what the characters in the picture are feeling

and thinking; and the outcome of the event.

IV. **Need for Aggression-** Humans engage in aggression when they seek to cause harm or pain to another person. Aggression takes two forms depending on one's motives: hostile or instrumental. Hostile aggression is motivated by feelings of anger with intent to cause pain. In contrast, instrumental aggression is motivated by achieving a goal and does not necessarily involve intent to cause pain. Some researchers argue that aggression serves an evolutionary function. Men are more likely than women to show aggression. From the perspective of evolutionary psychology, human male aggression, like that in nonhuman primates, likely serves to display dominance over other males, both to protect a mate and to perpetuate the male's genes. Sexual jealousy is part of male aggression; males endeavour to make sure their mates are not copulating with other males, thus ensuring their own paternity of the female's offspring. Although aggression provides an obvious evolutionary advantage for men, women also engage in aggression. Women typically display instrumental forms of aggression, with their aggression serving as a means to an end. For example, women may express their aggression covertly, for example, by communication that impairs the social standing of another person. Another theory that explains one of the functions of human aggression is frustration aggression theory. This theory states that when humans are prevented from achieving an important goal, they become frustrated and aggressive.

V. **Curiosity and Exploration -** Often people engage in activities without a clear goal or purpose but they derive some kind of pleasure out of it. It is a motivational tendency to act without any specific identifiable goal. The tendency to seek for a novel experience, gain pleasure by obtaining information, etc. are signs of curiosity. Hence, curiosity describes behavior whose primary motive appears to remain in the activities themselves. What will happen if the sky falls on us? Questions of this kind (What will happen if…) stimulate intellectuals to find answers. Studies show that this curiosity behavior is not only limited to human beings, animals too show the same kind of behavior. We are driven to explore the environment by our curiosity and our need for sensory stimulation. The need for varied types of sensory stimulations is closely related to curiosity. It is the basic motive, and exploration and curiosity are the expressions of it. Our ignorance about a number of things around us becomes a powerful motivator to explore the world. We get easily bored with repetitive experiences. So we look for something new. In the case of infants and small children, this motive is very dominant. They get satisfaction from being allowed to explore, which is reflected in their smiling and babbling.

Approaches of Motivation

There are different views on motivation. These views are explained as theories of motivation. The theories of motivation, try to provide general sets of principles to guide our understanding of the urges, wants, needs, desires, strivings and goals that come under the heading motivation.

Drive theory: Biological needs leads to the arousal of drive, which activate efforts to reduce them. Behaviors that succeed in reducing drive are

strengthened, and are repeated, when the drive is aroused again. Behaviors that fail to reduce drive are weakened, and are less likely to recur when the drive is aroused again.

Need: It is the requirement of some material such as food or water that is essential for the survival of the organism. When an organism has a need, it leads to a psychological tension as well as a physical arousal that motivates the organism to act inorder to fulfil the need to reduce the tension. This tension is called drive.

There are two types of drive: primary drives and secondary drives. **Primary drives** are innate biological needs (e.g., thirst, hunger, and desire for sex) that are usually necessary for survival. Secondary drives, on the other hand, are not usually necessary for survival and are often linked to social or identity factors (e.g., the desire for wealth). **Secondary drives** are associated with primary drives because the satisfaction of secondary drives indirectly satisfies primary drives. For example, the desire for wealth is not necessary for survival; however, wealth provides you with money that can be used to acquire food, shelter, and other basic needs, thereby indirectly satisfying these primary drives. Secondary drives become associated with primary drives through classical conditioning. This theory also includes the concept of homeostasis. Homeostasis is the tendency to maintain a balance, or optimal level, within a biological system. When there is a need, the body is in a state of imbalance. Satisfying the need brings the body back to equilibrium or state of balance.

Psychoanalytic Theory: This theory which has been explained by Sigmund Freud, deals with unconscious motivation. According to Freud, the inborn tendencies called instincts influence our behavior. There are two groups of instincts with opposite nature:

(a) **Life instincts (Eros):** these instincts have the life energy called Libido-which motivates the individual towards constructive activities like love, sympathy/helping others, etc.

(b) **Death instincts (Thanatos**): motivate the individual for destructive activities like murder, suicides, aggression, attack, etc.

Freud has emphasized that the unconscious motives play more dominant role in determining our behavior, than conscious or preconscious. He pointed that; our actions are determined by our unconscious motives. According to him, our unconscious mannerisms, slips of tongue and pen, phobias are the result of these hidden motives. These hidden motives may also drive the people towards various psychosomatic disorders like chronic headaches, insomnia, gastric troubles, etc. Our motives also appear in the form of dreams according to Freud.

Humanistic Theory: This theory believes in striving tendency of the individual for realizing his potentialities, especially creative ones, strengthening self-confidence and attaining the ideal self. There are two important persons related to this theory— Abraham Maslow and Carl Rogers.

These are:

a. **Biological motives like hunger, thirst, etc.**
b. **Safety and security needs (protection from external threats)**
c. **Love and belongingness needs (Affection, warmth, etc.)**
d. **Esteem needs (self-esteem, respect, approval, etc.)**

e. Self-actualization motive (achieving maximum development of one's potentialities).

Maslow has explained that every individual struggle to fulfil basic needs first, and then followed by safety, love, esteem and finally actualization needs. According to him the needs at one level should be satisfied at least partially, before the next level needs become active. Most of the people end their struggle to reach third or fourth level needs. Only a few will aspire for self-actualisation which is the ultimate goal of life. Self-actualisation means becoming everything one is capable of, or becoming what he can, that is, fulfilment of his basic potentialities. Maslow explains that the self- actualized people experience, what he calls the 'peak experiences', when they fulfill the need for self-actualisation.

Carl Rogers, as a humanist believes in the strength and potentialities of human beings. According to him all human beings have a natural inclination for learning and a desire to grow and progress known as self-actualizing tendency. Every individual will strive to realise his potentialities and to grow to become a fully functioning person. Hence in the view of Rogers, the motivation for self-growth and becoming a fully functioning person are important concepts.

Optimal-level Theory: This is also called as theory of homeostasis. Claud Bernard coined the word homeostasis to explain the state of equilibrium in the body. This is a 'hedonistic' (hedonism- doctrine that happiness is the highest good) theory which says that, there is a certain optimal level for normal functioning of the body. Maintenance of optimal level leads to equilibrium which gives pleasure. Disequilibrium leads to displeasure. Hence, every individual strives to avoid disequilibrium by maintaining optimal level of the needs like food, water, body temperature, etc.

Cognitive Theory: Cognitive theories of motivation seek to explain human behavior as a product of the careful study and active processing and interpretation of information received. Such a perspective runs counter to rationalizing human behavior as a result of automatic responses governed by preprogrammed rules or innate mechanisms involving drives, needs and reactions. The actions of humans, in addition to what motivates them to engage in particular actions, are therefore, the product of deliberate thought processes such as beliefs, expectations, knowledge about things and past experiences.

Goal Setting Theory: According to one cognitive theory of motivation, the Goal Setting Theory, three factors affect an individual's probability of success in achieving an outcome.
Specifically, these are

a) the time set for the attainment of a goal
b) **the degree of complexity or difficulty of the goal**
c) the specificity of the goal

Ideally, the shorter the time between the initiation of action toward a goal and the time the goal is achieved, the greater are the chances of success. With regard to level of complexity of the goal, it is said that this factor determines how attractive the goal is to the person. A goal is most attractive and appealing to an individual if it is neither too easy nor too difficult to attain. Goals that are too easy fail to provide satisfaction for the individual while goals that are too

difficult to obtain can cause a person to feel discouraged and expend less effort in trying to attain the goal. Furthermore, goals need to be precise so that the individual knows exactly what is expected of him and the type and amount of effort / actions needed in order for him to attain the goal.

Expectancy – Value Theory: Simply stated, this theory asserts that the motivation of people and their probability of success in attaining their goals largely depend on their expectation of success multiplied by the value they place on success. Different people have varied expectancies, which are influenced by past experiences and appraisals of these past experiences, in addition to social and cultural factors such as parental values and gender-role stereotypes. Those with positive expectancies are convinced that they have what it takes to succeed at a task while those with negative expectancies believe in their impending failure. People who expect to succeed at obtaining a goal and to whom the attainment of the goal is quite important, are more highly motivated to engage in actions that will ascertain attainment of the goal.

Attribution Theory: Attribution theory suggests that individuals, as learners, have a deeply- rooted need to understand how and why they encounter success or failure at a task, especially when the outcome is an unexpected one. Some explanations or causal attributions that people make may be related to amount of effort, degree of luck, ability levels and task difficulty. An important concept supported by this theory is that of locus of control, which has to do with whether a person believes his success or failure to be the result of internal factors such as one's own ability and effort (internal locus) or of external factors such as difficulty of task (external locus).

Arousal theory : People are set to have an optimum level of tension or arousal that they seek to maintain by increasing or decreasing stimulation. The relationship between task performance and arousal has been explained by Yerkes Dodson law. The Yerkes–Dodson law is an empirical relationship between arousal and performance, originally developed by psychologists Robert M. Yerkes and John Dillingham Dodson in 1908. The law dictates that performance increases with physiological or mental arousal, but only up to a point. When levels of arousal become too high, performance decreases. The process is often illustrated graphically as a bell-shaped curve which increases and then decreases with higher levels of arousal. Research has found that different tasks require different levels of arousal for optimal performance. For example, difficult or intellectually demanding tasks may require a lower level of arousal (to facilitate concentration), whereas tasks demanding stamina or persistence may be performed better with higher levels of arousal (to increase motivation). Because of task differences, the shape of the curve can be highly variable. For simple or well-learned tasks, the relationship is monotonic, and performance improves as arousal increases. For complex, unfamiliar, or difficult tasks, the relationship between arousal and performance reverses after a point, and performance thereafter declines as arousal increases. Arousal theory proposes that motivation is strongly linked to biological factors that control reward sensitivity and goal-driven behavior. The reward system in the human body spurs physiological arousal, which motivates individuals to engage in whatever behavior is necessary to relieve their arousal. Research shows that

there tends to be an optimal level of arousal for peak performance; when arousal is very high or very low, performance tends to suffer. Traits like impulsivity and sensation-seeking predispose people to engage in activities that they find physiologically arousing.

Zukerman Sensation Seeking

Sensation seeking is a personality trait defined by the search for experiences and feelings, that are **"varied, novel, complex and intense"**, and by the readiness to **"take physical, social, legal, and financial risks for the sake of such experiences."** Risk is not an essential part of the trait, as many activities associated with it are not risky. However, risk may be ignored, tolerated, or minimized and may even be considered to add to the excitement of the activity. The concept was developed by Marvin Zuckerman of the University of Delaware. In order to assess this trait he created a personality test called the Sensation Seeking Scale. This test assesses individual differences in terms of sensory stimulation preferences. So there are people who prefer a strong stimulation and display a behavior that manifests a greater desire for sensations and there are those who prefer a low sensory stimulation. The scale is a questionnaire designed to measure how much stimulation a person requires and the extent to which they enjoy the excitement. Zuckerman hypothesized that people who are high sensation seekers require a lot of stimulation to reach their Optimal Level of Arousal. When the stimulation or sensory input is not met, the person finds the experience unpleasant

Sensation-seeking can be divided into 4 traits:

Thrill- and adventure-seeking: Desire for outdoor activities involving unusual sensations and risks, such as skydiving, scuba diving, high-speed driving and flying.

Experience-seeking: Referring to new sensory or mental experiences through unconventional choices, also including psychedelic experiences, social nonconformity and desire to associate with unconventional people.

Dis-inhibition: Preference of "out of control" activities such as wild parties, drinking and illegal activities

Boredom susceptibility: intolerance of repetition or boring people, and restlessness in such conditions.

The most recent version of the Sensation Seeking Scale (SSS-V) has demonstrated moderate validity and reliability

The first Sensation Seeking Scale (SSS) was created by **Martin Zuckerman** and others in **1964.** This was considered **Form I and Form II** was similar, though slightly

revised. Analysis and use of these two forms showed that there was more than one dimension to sensation seeking behavior. There were four components to sensation seeking **thrill, social, visual and antisocial**. **Form III** was the introduction of an **experimental form with 113 items** on it. In **1971,** the scale

was further revised to **From IV** and the sensation seeking components were revised with it to include: **thrill, experience, dis-inhibition and boredom susceptibility**. This scale also had some reliability issues and the scoring and so in **1978** it was revised one more time to the current **Form V.s in 1993** a new scale was developed for children. The scale slightly changed the factors to **thrill and adventure seeking, drug and alcohol attitudes and social dis-inhibition**. The Sensation Seeking Scale is one of the most common psychological instrument for measuring sensation seeking. It was created in **1964 by Marvin Zuckerman**, at the **University of Delaware. Zuckerman** created the scale with the purpose of better understanding personality traits such as neuroticism, antisocial behavior, and psychopathy. This has gone through a few iterations and is currently on its 1978 version: SSS-V. There are 4 different aspects (subscales), which are: **Thrill and Adventure Seeking (TAS), Disinhibition (Dis), Experience Seeking (ES), and Boredom Susceptibility (BS).** Each subscale contains 10 items, making a total of 40 items. Zuckerman has proposed that these 'traits' come from a psycho-biological interaction.

Very Short Questions (One sentence)

1. **Intrinsic motivation** -Drive to perform an activity for its own sake due to interest, enjoyment, and satisfaction. Examples include hobbies and challenges.

2. **Extrinsic motivation** -Drive to perform an activity to meet outcomes separately from the activity itself. This might include rewards, money, and praise. Examples include grades and salaries.

3. **Achievement motivation**-Drive to accomplish difficult tasks and attain excellence. Individuals with high achievement motivation set challenging goals.

4. **Affiliation motivation** -Drive to establish and maintain positive interpersonal relationships. Examples include socializing and seeking approval.

5. **Power motivation** -Drive to attain social influence and control over others. Examples include seeking leadership roles and status.

6. **Incentive Motivation**-Pursuing a goal to get specific rewards or avoid punishments. This includes external incentives, such as bonuses, promotions, or penalties.

7. **Motivation and Achievement**- Motivation plays a crucial role in driving individuals to set goals. It helps persevere through challenges and achieve success.

8. **Motivation and Learning**
   Motivation influences the learning process by:
   directing attention, promoting effort, and enhancing memory consolidation.

9. According to Lewin, tensions are emotional states which accompany. In avoidance-avoidance conflict, the individual is compelled to decide on between.

A releaser could be a highly specific stimulus that "triggers" or initiates.

10. Psychological conflict that results when a choice must be made between two negative alternatives —compare approach-approach conflict, approach-avoidance conflict.

Short Questions (100-120 words)

1. Define Motive.
A motive is generally defined as a state of physiological or psychological arousal which influences how we behave. For example, a physiological arousal, such as hunger or thirst, motivates us to eat or get something to drink.
2. Define Motivation.
Motivation involves the biological, emotional, social, and cognitive forces that activate behavior. In everyday usage, the term motivation is frequently used to describe why a person does something.
3. What are primary motives?
Primary Motives are physiological/biological needs that are crucial for a person's survival. E.g. food, water and air.
4. What are secondary motives?
Secondary motives are psychological needs that are learned and acquired over time and also vary person to person. Examples include motive of achievement, motive of affiliation and motive of power.
5. What is the difference between intrinsic and extrinsic motivation?
Intrinsic motivation involves doing something because it's personally rewarding to you. Extrinsic motivation involves doing something because you want to earn a reward or avoid punishment.
6. Explain the concept of motivation.
The term motivation is derived from the Latin word 'movere' referring to movement of activity. Thus, it pushes an individual (organism) into activity.
It can be used to explain drives, needs, goals and incentives… Any behaviour is goal driven, demand persistent and often preferred or is in favor of one goal over the other. It is individuals internal force which energizes and directs the behaviour.
7.Explain Zukerman Sensation Seeking. (Refer to page no.141)

8. Discuss the difference between Biological and Social Motives. (Refer to page no. 132-135)

9. How do you balance push and pull motivation?

While push motivation and pull motivation represent different and opposing forces, they are not mutually exclusive. The best strategy usually involves a mix of these two forms of motivation. For example, a student may initially be driven to study for an exam by fear of failure or poor grades. However, as they delve deeper into the subject, they begin to feel naturally drawn toward the subject, driven by growing interest or a sense of accomplishment.

Experts recommend using a combination of push and pull factors to most effectively achieve your goals. Setting clear goals and focusing on the positive incentives that pull you toward them are more sustainable than relying on push factors alone. However,

there may be times when push motivation is necessary to overcome inertia or overcome a challenging obstacle.

10. What do you mean by Innate versus acquired motives? (Refer to answer of Q-8)

Long / Extensive Questions (3-4 Pages):

1. What are the biological bases of hunger and thirst needs?

The biological or physiological approach to explain motivation is the earliest attempt to understand causes of behaviour. Most of the theories, which developed later, carry traces of the influence of the biological approach. The approach adhering to the concept of adaptive act holds that organisms have needs (internal physiological imbalances) that produce drive, which stimulates behaviour leading to certain actions towards achieving certain goals, which reduce the drive. The earliest explanations of motivation relied on the concept of instinct. The term instinct denotes inborn patterns of behaviour that are biologically determined rather than learned. Some common human instincts include curiosity, flight, repulsion, reproduction, parental care, etc. Instincts are innate tendencies found in all members of a species that direct behaviour in predictable ways. The term instinct most approximately refers to an urge to do something. Instinct has an "impetus" which drives the organism to do something to reduce that impetus. Some of the basic biological needs explained by this approach are hunger, thirst, and sex, which are essential for the sustenance of the individual.

Hunger:

The stimuli of hunger include stomach contractions, which signify that the stomach is empty. A low concentration of glucose in the blood. A low level of protein and the amount of fats stored in the body. The liver also responds to the lack of bodily fuel by sending nerve impulses to the brain. The aroma, taste or appearance of food may also result in a desire to eat. They all in combination act with external factors (such as taste, colour by observing other's eating, and the smell of food, etc.) to the help one understands that she/he is hungry.

Thirst:

When we are deprived of water for a period of several hours, the mouth and throat become dry, which leads to dehydration of body tissues. Drinking water is necessary to wet a dry mouth. The processes within the body itself control thirst and drinking of water. Water must get into the tissues sufficiently to remove the dryness of mouth and throat. Motivation to drink water is mainly triggered by the conditions of the body. Loss of water from cells and reduction of blood volume. When Water is lost by bodily fluids, water leaves the interior of the cells. The anterior hypothalamus contains nerve cells called 'osmoreceptors', which generate nerve impulses in case of cell dehydration. These nerve impulses act as a signal for thirst and drinking.

Ist View:

The mechanism which explains the intake of water is responsible for stopping the intake of water.

IInd View:

The role of stimuli resulting from the intake of water in the stomach have something to do with stopping of drinking water.

The precise physiological mechanisms underlying the thirst drive are yet to be

understood.

2. **How do the needs for achievement, affiliation, and power influence the behaviour of adolescents? Explain with examples.**

Needs for achievement:

It energies and directs behaviour as well as influences the perception of situations. During the formative years of social development, children acquire achievement motivation. They learn it from their parents, other role models, and socio-cultural influences.

We are social being. We maintain some form of relationship with others. Nobody likes to remain alone all the time. Formation of group is an important feature of human life. It involves motivation for social contact.

Need for affiliation seeking other human beings and wanting to be close to them both physically and psychologically is called affiliation. It involves motivation for social contact.

It is aroused when individuals feel threatened or helpless and also when they are happy. People high on this need are motivated to seek the company of others and to maintain friendly relationships with other people.

Need for power is an ability of a person to produce intended effects on the behaviour and emotions of another person. The various goals of power motivation are to influence, control, persuade, lead and charm others.

3. **What is the basic idea behind Maslow's hierarchy of needs? Explain with suitable examples.**

Abraham Maslow, a humanist psychologist proposed a hierarchy of needs in which human needs are arranged in a sequence from primitive to human. They are interrelated in the sense that when one need is fulfilled, the next one takes on the mind. At the lowest level are the physiological needs followed by the other higher-level needs as given below:

1. Physiological needs: These are needs which are basic for survival. They include such as hunger, thirst.

2. Safety needs: The need to be free from any possible threat-both real and imaginary. It is of both physical and psychological nature.

3. Belongingness: Needs to belong, to affiliate, to love and to be loved by others. One can't live alone and needs other's company.

4. Esteem needs: Individual strives for the need for self-esteem to develop a sense of self-worth once his belongingness needs are fulfilled.

5. Self-actualisation: It means to attain the fullest developments of one's potential. Such people are self-aware, socially responsible, creative, spontaneous, open to novelty and change, has a sense of humor and capacity for deep interpersonal relationships.

4. **Explain types of motives in detail. (Refer to page no. 133-135)**
5. **Discuss the concept and difference between Extrinsic vs. Intrinsic Motivation.**

Intrinsically motivated behaviors are performed because of the sense of personal satisfaction that they bring. According to Deci (1971), these behaviors are defined as ones for which the reward is the satisfaction of performing the activity itself. Intrinsic motivation thus represents engagement in an activity for its own sake. For example, if you are in college because you enjoy learning new

things and expanding your knowledge, you are intrinsically motivated to be there.

Extrinsically motivated behaviors, on the other hand, are performed in order to receive something from others or avoid certain negative outcomes. Theorists define extrinsic motivation as ―engaging in an activity to obtain an outcome that is separable from the activity itself‖ (deCharms, 1968; Lepper & Greene, 1978). The extrinsic motivator is outside of, and acts on, the individual. Rewards—such as a job promotion, money, a sticker, or candy—are good examples of extrinsic motivators. Social and emotional incentives like praise and attention are also extrinsic motivators since they are bestowed on the individual by another person.

6. **Explain the different approaches of motivation. (Refer to page no. 138-141)**
7. **Discuss Goal-motivated behavior with Examples. (Refer to page no. 133)**
8. **Explain Motivational cycle through diagram. (Refer to page no. 132, and 133)**
9. **What do you understand by Pull and Push mechanism, explain in detail?**

Motivation is a fundamental aspect of human behaviour, driving us to take action and achieve our goals. It is a critical factor in human behaviour and organizational performance. Motivation follows a cycle: key components include activation of a need/drive, persistence, intensity, and termination, all influenced by individual, social, and situational factors. This cyclic process responds to continuous demands from within and outside ourselves.

The push and pull theory of motivation, initially developed in migration studies (Lee, 1966), has been adapted to fields like consumer behaviour and organizational psychology. It offers a framework to comprehend the factors shaping human behaviour and decision-making processes. This model suggests that people are motivated by both internal forces (push factors) and external attractions (pull factors) simultaneously.

Push Motivation is a behaviour where an individual forces themselves to complete a task to satisfy a need or achieve a goal. This type of motivation is driven by external factors, such as avoiding negative outcomes or meeting the expectations of others. The key characteristic of push motivation is that it stems from a desire to avoid something undesirable, rather than a natural inclination towards the task at hand. While push motivation can be effective in the short term, it may not be sustainable in the long run. It can lead to burnout, resentment, or a lack of intrinsic satisfaction.

Pull Motivation in contrast, is a behaviour where an individual feels naturally drawn towards an activity. This type of motivation is driven by internal factors, such as the pursuit of positive outcomes or the inherent enjoyment of the task itself. Pull motivation is often more sustainable than push motivation, as it taps into an individual's intrinsic desires and interests. When people are motivated by pull factors, they are more likely to experience a sense of fulfilment and engagement in their activities, leading to better long-term outcomes.

Some examples of push motivation include:

Staying up late to accomplish the project assigned, even when you do not find

the job enjoyable, doing it only to not let down your boss.
Long hours of studying with no interest in the specific subject area, just aimed at improving academic grades to have a good social image and being liked by teachers and parents.
Athletes break their records as they desire to win and avoid losing.

Some examples of pull motivation include:

A real fan going to the concert of their favourite band is pulled by their genuine love for music.
A consumer looking at shoes in a store window is compelled by their desire for personal expression or self-indulgence
An art learner paints because he loves it, and is passionate about it not because he has to, but due to an unending urge towards it.
Pull factors are the motivators that "attract" individuals to create a new venture through their own personal desire, while push factors are motivators that, drawing on external factors unrelated to the individuals' entrepreneurial characteristics, "force" these individuals to engage in entrepreneurship.

UNIT VIII

UNIT VIII	Emotion: Nature of Emotion; Basic Emotions; Expressions of Emotion: Universal Versus Culture Specific; Theories of Emotion: James-Lange, Cannon-Bard, Schachter-Singer.

The words "emotion" and "motivation" are related etymologically (in the history of language). Motive comes from the Latin word *motus*–to move. Emotion comes from the Latin word *emotus*–to stir up. Emotions stir us up; motives move us. Anything that motivates you probably moves you emotionally as well. An event causing strong emotions is likely to motivate you toward something or away from something. The basic motivational dichotomy of approach and avoidance seems to underlie all of life, including psychology.

Emotion is a subjective feeling and the experience of emotions varies from person to person. In psychology, attempts have been made to identify basic emotions. It has been noted that at least six emotions are experienced and recognised everywhere. These are: anger, disgust, fear, happiness, sadness, and surprise. **Izard,** has proposed a set of ten basic emotions, i.e. joy, surprise, anger, disgust, contempt, fear, shame, guilt, interest, and excitement with combinations of them resulting in other emotional blends. According to **Plutchik**, there are eight basic or primary emotions. All other emotions result from various mixtures of these basic emotions. He arranged these emotions in four pairs of opposites, i.e. joy-sadness, acceptance, disgust, fear-anger, and surprise-anticipation. Emotions vary in their intensity (high, low) and quality (happiness, sadness, fear). Subjective factors and situational contexts influence the experience of emotions. These factors are gender, personality, and psychopathology of certain kinds. Evidence indicates that women experience all the emotions except anger more intensely than men. Men are prone to experience high intensity and frequency of anger. This gender difference has been attributed to the social roles attached to men (competitiveness) and women (affiliation and caring).

Simple Definition - A strong feeling (such as love, anger, joy, hate, or fear).
Technical Definition - A conscious mental reaction (as anger or fear) subjectively experienced as strong feeling usually directed toward a specific object and typically accompanied by physiological and behavioral changes in the body.
Nine basic emotions- Anger, fear, happiness, sadness, guilt, shame, safety, hurt, and loneliness. Each of these emotions can be broken down into secondary and tertiary emotions.

THEORIES OF EMOTIONS

Appraisal Theory of Emotion- According to appraisal (The act or process of developing an opinion, judgment, or assessment of the value of something.) theory, our interpretation of a situation causes an emotional response that is based on that interpretation.

1. The appraisal theory of emotion proposes that emotions are extracted from our "appraisals" (i.e., our evaluations, interpretations, and explanations) of events. These appraisals lead to different specific reactions in different people.

2. Psychologist Magda Arnold made early advancements in appraisal theory, proposing that an initial appraisal begins the emotional sequence by arousing both the appropriate physiological reactions and the emotional experience itself.
3. In 1991, psychologist Richard Lazarus built on appraisal theory to develop cognitive - mediational theory. This theory still asserts that our emotions are determined by our appraisal of the stimulus, but it suggests that immediate, unconscious appraisals *mediate* between the stimulus and the emotional response.
4. Lazarus also distinguished between *primary appraisal,* which seeks to establish the significance or meaning of an event, and *secondary appraisal,* which assesses the ability of the individual to cope with the consequences of the event.

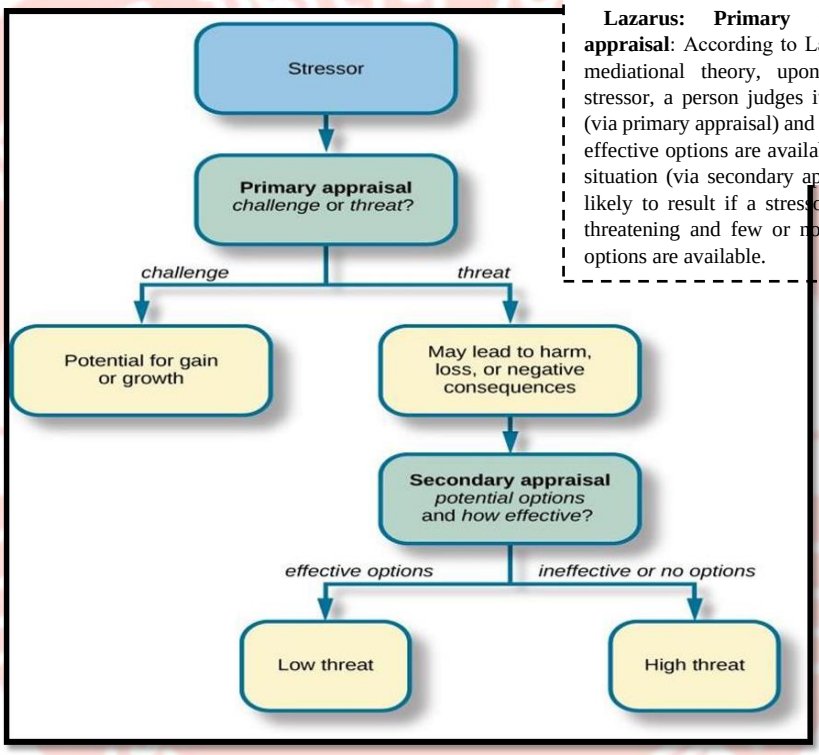
Researchers have developed several theories of how human emotions arise and are represented in the brain. The mechanisms behind our experience of emotions and our cognitive processing of them remains a central topic of research and debate. The appraisal theory of emotion, developed primarily through the work of prominent researchers Magda Arnold and Richard Lazarus, proposes that emotions are extracted from our "appraisals" (i.e., our evaluations, interpretations, and explanations) of events. The central question that the appraisal theory seeks to answer is *why* different people have different perceptions of and emotional reactions to the same situations.For example, if a person goes on a party and perceives this party as positive, they might feel happiness, joy, giddiness, excitement, or anticipation because they have appraised this event as one that could have positive effects. On the other hand, if the party is perceived negatively, the person's resulting emotions might include dejection, sadness, emptiness, or fear (Scherer et al., 2001).

Magda Arnold (1903–2002) was an American psychologist who coined the term *appraisal* to refer to the cognitive processes preceding the elicitation of emotion. She developed her "cognitive theory" in the 1960s, which specified that the first step in experiencing an emotion is an appraisal of the situation. According to Arnold, an initial appraisal begins the emotional sequence by arousing both the appropriate physiological reactions and the emotional experience itself. In this way, she identified physiological changes as important to the process but not as the initiator of people's reactions and experiences.

Psychologist **Richard Lazarus (1991)** adapted Arnold's work slightly in the development of his *cognitive-mediational theory,* which asserts our emotions are *determined by* our appraisals of stimuli. This appraisal mediates between the stimulus and the emotional response, and it is immediate and often unconscious. In contrast to the Schachter–Singer theory of emotions, which views emotion as an outcome of the interaction between physiological arousal and cognition, Lazarus argued that the appraisal *precedes* cognitive labeling, simultaneously stimulating both the physiological arousal and the emotional experience itself. Lazarus argued that the cognitive activity involved in interpreting emotional context could be conscious or unconscious and may or may not take the form of conceptual processing. He stressed that the quality and intensity of emotions are controlled through cognitive processes, which mediate the relationship between the person and the environment through coping strategies, which in

turn are the basis of the emotional reaction.

In his research, Lazarus specified two major types of appraisal methods: 1) *primary appraisal*, which seeks to establish the significance or meaning of an event, and 2) *secondary appraisal*, which assesses the ability of the individual to cope with the consequences of the event. In the specific context of emotion and stress, Lazarus described primary appraisals as judgments about the degree of potential harm or threat to well-being that a stressor might introduce. The perception of a threat then triggers the secondary appraisal—judgment of the options available to cope with the stressor—as well as perceptions of how effective such options will be.



Lazarus: Primary and secondary appraisal: According to Lazarus' cognitive-mediational theory, upon encountering a stressor, a person judges its potential threat (via primary appraisal) and then determines if effective options are available to manage the situation (via secondary appraisal). Stress is likely to result if a stressor is perceived as threatening and few or no effective coping options are available.

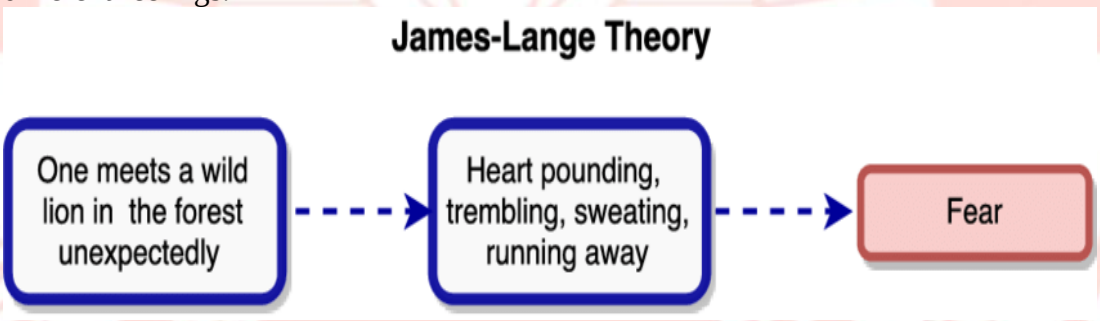
James–Lange Theory of Emotion- According to the James–Lange theory of emotion, emotions arise from physiological arousal.

1. The James–Lange theory of emotion asserts that emotions arise as a result of physiological arousal —i.e., that the self-perception of changes in the body produces an emotional experience.
2. According to the James–Lange theory, we experience emotions (such as fear, sadness, and happiness) only *after* physiological arousal (such as the fight-or-flight response) has occurred.
3. One limitation of the James–Lange theory is that it is not known exactly what causes the changes in the body, so it is unclear whether they should be considered part of the emotion itself.

Critics of the James–Lange theory doubt that there is sufficient variation in physiological arousal to lead to the wide variety of emotions that we experience.

Visceral: Having to do with the response of the body as opposed to the intellect and rational thinking.
Autonomic: Acting or occurring involuntarily, outside of conscious control.
Epinephrine: A hormone, and a neurotransmitter, that regulates heart rate, blood vessel and air passage diameters, and metabolic shifts and that is a crucial component of the fight-or-flight response of the sympathetic nervous system.
Proprioceptive: The sense of the positions of body parts relative to other neighboring body parts.

Researchers have developed several theories of how human emotions arise and are represented in the brain. The James–Lange theory of emotion, for instance, asserts that emotions arise from physiological arousal: in essence, that the self-perception of changes in the body produce emotional experiences. According to this theory, we laugh (a physiological response to a stimulus), and consequently we feel happy (an emotion); we cry, and consequently we feel sad. For example, if you were to encounter a venomous snake in your backyard, your sympathetic nervous system (responsible for activating your fight-or-flight response) would initiate physiological arousal, making your heart race and increasing your breathing rate. According to the James–Lange theory of emotion, you would experience a feeling of fear only *after* this physiological arousal had taken place. Different arousal patterns would be associated with different feelings.



Limitation of this theory is that it is not known exactly what causes the changes in the body, so it is unclear whether those changes should be considered part of the emotion itself. Critics of the James–Lange theory also doubt that there is sufficient variation in physiological arousal to lead to the wide variety of emotions that we experience. To address these limitations, other theories—such as the Cannon–Bard theory—have been developed.

Cannon–Bard Theory of Emotion- The Cannon–Bard theory of emotion argues that physiological arousal and emotional experience occur simultaneously but independently.

A. The Cannon–Bard theory of emotion was developed in response to the James-Lange
    a. theory, which proposes that emotions arise from physical arousal.

B. In contrast, the Cannon–Bard theory argues that physiological arousal and

emotional experience occur simultaneously, yet independently.

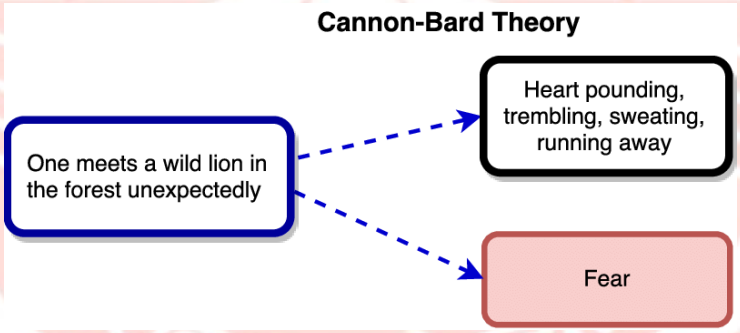
C. According to the Cannon–Bard theory, when you see a venomous snake, you feel fear at exactly the same time that your autonomic nervous system responds.

D. According to this theory, emotional expression results from activation of the subcortical centers of the brain.

Sub-cortical: Of or pertaining to the portion of the brain located below the cerebral cortex.

Thalamus: Either of two large, ovoid structures of grey matter within the forebrain that relay sensory impulses to the cerebral cortex

Researchers have developed several theories of how human emotions arise and are represented in the brain. The Cannon–Bard theory of emotion was developed by researchers who criticized the James– Lange theory for its limited ability to account for the wide variety of emotions experienced by human beings. While the James–Lange theory proposes that emotions arise from physical arousal the Cannon–Bard theory argues that physiological arousal and emotional experience occur simultaneously, yet independently (Lang, 1994). This theory posits that when you see a venomous snake in your backyard, you feel fear at exactly the same time that your body initiates its physiological fight-or-flight response. Even though they occur at the same time, your emotional reaction and your physiological reaction would be separate and independent.



According to the Cannon–Bard theory, emotional expression results from activation of the subcortical centers of the brain. The optic thalamus, in particular, is a region that contains the neural organizations for different emotional expressions. An individual's sensory organs take in an emotional stimulus, and then information about that stimulus is relayed to the cerebral cortex. It is in the cortex where such information is associated with conditioned processes, which in turn determine the direction of the response and stimulate the thalamic processes.

Schachter–Singer Theory of Emotion (Two-Factor Theory)- The Schachter–Singer theory views emotion as the result of the interaction between two factors: physiological arousal and cognition.

- According to the Schachter–Singer theory of emotion (also known as two-factor theory), emotions are the result of the interaction between two factors: physiological arousal and cognition.
- According to the Schacter–Singer theory, physiological arousal is cognitively interpreted based on environmental context; this process culminates in emotional experience.
- For example, if you were to see a venomous snake in your backyard, the Schachter– Singer theory argues that the snake would elicit a physiological response that would be cognitively labeled as fear based on the context.

Autonomic: Acting or occurring involuntarily, outside of conscious control.
Cognition: The process of thinking or knowing.

Researchers have developed several theories of how human emotions arise and are represented in the brain. Like the James–Lange and Cannon–Bard theories, the Schachter– Singer theory of emotion (also known as the two-factor theory) attempts to explain emotion as it relates to physiological arousal. According to the Schacter–Singer theory, emotion results from the interaction between two factors: physiological arousal and cognition. More specifically, this theory claims that physiological arousal is cognitively interpreted within the context of each situation, which ultimately produces the emotional experience. These cognitive interpretations —how a person labels and understands what they are experiencing—are formed based on the person's past experiences. For example, if you were to see a venomous snake in your backyard, the Schachter–Singer theory argues that the snake would elicit sympathetic nervous system activation (physiological arousal) that would be cognitively labeled as fear (cognition) based on the context. What you would actually experience, then, would be the feeling of fear.

In their research, Singer and Schachter injected participants with adrenaline (epinephrine), which causes a number of physiological effects, such as increased blood flow to the muscles and increased heart rate. They found that injecting the drug did not lead participants to experience any given emotion. Contrary to the James–Lange theory, therefore, which asserts that emotions arise from physiological arousal, this theory argues that bodily changes can support conscious emotional experiences but do not necessarily cause them. Rather, the interpretation of a certain emotion depends on both the individual's physiological state as well as their circumstances, a relationship mediated by cognitive processing.

Very Short Questions/ True Facts(One Sentence)

1. Mood is defined as-**a prevailing state of feeling.**
2. Which of these supports the James-Lange theory of emotion?-**emotion is a visceral response producing a behavioural response.**
3. The direct emotional circuit controlling fear comprises- **eye, thalamus, amygdala, hypothalamus.**

4. Which neurotransmitter is most commonly associated with depression?- **Serotonin**
5. Deliberately reinterpreting an event with the intention of modifying the emotional response to it is known as- **Cognitive Reappraisal.**
6. Which of the following best describes the concept of an emotion?-**A response to an external or internal stimulus with the purpose of motivating an action or behaviour**
7. In psychology, frustration could be a common emotional response to opposition, associated with anger, annoyance and disappointment.
8. Frustration arises from the perceived resistance to the fulfillment of a person's will or goal and is probably going to extend when a will or goal is denied or blocked.
9. Schachter–Singer theory of emotion also known as two-factor theory.
10. According to the Schacter–Singer theory, physiological arousal is cognitively interpreted.

Short Questions (100-120 words)

1. Define Emotion.

Emotion is a mental state associated with the nervous system brought on by chemical changes variously associated with thoughts, feelings, behavioral responses, and a degree of pleasure or displeasure.

2. Name the basic emotions that humans universally experience.

In the 20th century, Paul Ekman identified six basic emotions (anger, disgust, fear, happiness, sadness, and surprise)

3. What are life skills?

Life skills are abilities for adaptive and positive behavior that enable humans to deal effectively with the demands and challenges of life. This concept is also termed as psychosocial competency.

4. How does culture influence the expression of emotions?

Emotional expression involves posture, facial expression, actions, words and even silence. Cultural similarities in the facial expression of emotions such as anger, fear, disgust, sadness, happiness etc. have been observed. It must however, be noted that facial expression can, in some cases, be also misleading.

The display rules that regulate emotional expression and emotional vocabulary do vary across cultures. It has been found that children would cry when distressed, shake their heads when defiant and smile when happy. Despite similarities in expressions of certain basic emotions, cultures do vary in why and how they express emotions.

5. Analyze Cannon Bard's theory of emotions.

The Cannon-Bard theory claims that the entire process of emotion is mediated by thalamus which after perception of the emotion-provoking stimulus, conveys

this information simultaneously to the cerebral cortex and to the skeletal muscles and sympathetic nervous system. The cerebral cortex then determines the nature of the perceived stimulus by referring to past experiences. This determines the subjective experience of the emotion. At the same time the sympathetic nervous system and the muscles provide physiological arousal and prepare the individual to take action.

6. Explain the Relationship Between Motivation and Emotion.

The below points describe the relationship between motivation and emotion:

1. Emotions play a role in motivating behaviors. Positive emotions tend to motivate approach behaviors, while negative emotions motivate avoidance behaviors.
2. Motivation influences the type of emotion one experiences. Achieving goals tend to elicit positive emotions. Failure to meet goals often results in negative emotions.
3. Emotions provide information that can alter motivation. Emotions signal whether goals are being met and influence an individual's valuation of goals and choice of goals.
4. Motivation and emotion interact in a complex feedback loop. They determine each other over time.
5. Emotion regulation strategies can impact motivation levels and vice versa.

7. Explain the Facial Feedback Hypothesis.

The Facial Feedback Hypothesis- The facial feedback hypothesis asserts that facial expressions are capable of influencing our emotions.

a) According to the facial feedback hypothesis, facial expressions are not only the results of our emotions but are also capable of *influencing* our emotions. In other words, the acts of smiling can itself actually make you feel happier.
b) Research investigating the facial feedback hypothesis has found that suppressing facial expressions of emotion may decrease how intensely those emotions are experienced.
c) Emotion is displayed not only through facial expression but also through tone of voice, behavior, and body language.
d) Children who have autism spectrum disorder have difficulty recognizing the emotional states of others. Research has shown that this may stem from an inability to identify facial expressions and other nonverbal expressions of emotion.

8. Explain Schachter–Singer Theory of Emotion (Two-Factor Theory) in brief with the help of a diagram. (Refer to page no. 154)
10. Briefly explain James-Lange Theory of Emotion. (Refer to page no. 151-152)

<u>Long/Extensive Questions(3 to 5 pages):</u>

1. Define Emotions. Explain the role of Autonomic Nervous system (ANS) in emotional processing. (Refer to page no. 149, 151-154)

2. Does physiological arousal precede or follow an emotional experience? Explain.

William James and Carl Lange argued that the perception about bodily changes, like rapid breathing, a pounding heart and running legs following an event, – brings forth emotional arousal.This theory of emotion holds that body's reaction to a stimulus produces emotional reaction.

The theory suggests that environmental stimuli elicit physiological responses from viscera (the internal organs like heart and lungs), which in turn, are associated with muscle movement. James-Lange theory argues that your perception about your bodily changes, like rapid breathing, a pounding heart, and running legs, following an event, brings forth emotional arousal.

Canon and Bard contradicted to the James-Lange theory. According to this theory, felt emotion and the bodily reaction in emotion are independent of each other; both get triggered simultaneously.

This theory of emotion holds that bodily changes and the experience of emotion occurs simultaneously. Theory claims that the entire process of emotion is governed by thalamus. Thalamus conveys the information simultaneously to the cerebral cortex and to the skeletal muscles and sympathetic nervous system. The cerebral cortex then determines the nature of the perceived stimulus. By referring to the past experiences. This determines the subjective experience of emotion. Simultaneously the sympathetic nervous system and the muscles provide physiological arousal and prepare the individual to take action.

As proposed by the theory we first perceive potential emotion-producing situation which leads to activity in the lower brain region such as the hypothalamus which in turn sends output in two directions:

(a)To internal body organs, external muscles to produce bodily expressions

(b)To cerebral cortex where the pattern of discharge from the lower brain areas is perceived as felt emotion.

3. Is it important to consciously interpret and label emotions in order to explain them? Discuss giving Suitable examples.

Schacter-Singer theory- In 1970, the American psychologists Stanley Schachter and Jerome Singer, while adopting an eclectic approach to both the earlier theories of emotion, introduced a new theory named Cognitive theory of emotion.

They suggested that our physical arousal together withour perception and judgement of situation (cognition)jointly determine which emotions we feel.

In other words, our emotional arousal depends on both physiological changes and the cognitive or mental on both physiological changes and the cognitive or mental interpretation of those changes. One cannot work without the other.

The necessary detection and explanation for an emotional state always rests with the interpretation of situation. Since this interpretation is purely a subject of cognitive functioning, the cognitive factors are said to be the potent determiners of our emotional states.The views expressed by Schachter and Singer was also supported by Magda Arnold by stating that cognitive processes control how we interpret our feelings and how we act on them. She used the term Cognitive Appraisal for the identification and interpretation of emotion provoking stimuli.

A third element, in understanding the relationship between physical reactions and emotional experience aroused on account of the perception of an emotion provoking stimulus.

Cognitive theory helped us to learn that the emotional experience and physiological changes through which we pass are determined by the way we interpret a situation through the cognitive element of our behaviour in the form of our previous knowledge and our interpretation of the present situation directly affect our emotional experience.

4. Why is it important to manage negative emotion? Suggest ways to manage negative emotions.

It is important to control negative emotions in order to ensure an effective social functioning. Positive emotions should be enhanced. We can reduce/manage negative emotions in the following manner.

Negative emotions like fear, anxiety, disgust are such emotions if allowed to prevail for a long time, they are likely to have adverse effects on our well-being. Anxious individuals find it difficult to concentrate. They are not able to take decisions. Depression impairs individuals' ability to think rationally, feel realistically and work effectively.

Following tips prove useful to manage negative emotion effectively and achieving the desire balance of emotion:

1. Enhance self-awareness: Try to get insight into your own emotions and this makes you understand them in a better way. Knowing about your capabilities and limitation helps.

2. Appraise the situation objectively: An evaluation of situation and gaining insight into it determines the level and direction of emotion.

3. Self monitoring: A periodic evaluation of past accomplishments, emotional and physical states and other positive experiences enhance faith in yourself and leads to contentment.

4. Self-modeling: Analyzing past performances and the positive aspects attached to it provides with inspiration and motivation to perform better next time.

5. Perceptual reorganization and cognitive rest-ructuring: Changing old patterns and following new positive ones. Restructure your thoughts to enhance positively and eliminate negative thoughts.

6. Be creative: Take up some hobby or develop and interest in something creative and innovative. Create fun for yourself by pursuing such activity of interest.

7. Develop and nurture good relationship: One who shares good interpersonal relationship with others never feel alone and disheartened.

8. Empathy: Looking at other's situation as it was your own. Understanding others well help you in understanding your own self in a better way. It adds meaning to your life.

9. Participation in community services: this can prove to be very effective in creating a balance of emotion in your life.

5. Discuss the Appraisal Theory of Emotion in detail. (Refer to page no. 149-151)

6. Explain the difference between Canon-Bard Theory of Emotion and Schachter–Singer Theory of Emotion. (Refer to page no. 151-153)

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MULTIPLE CHOICE QUESTIONS

UNIT – 1

1. The word "Psychology' comes from:
   a. Latin
   b. Spanish
   c. Greek
   d. Italian

2. The term "tabula rasa" highlights the importance of _____ in shaping behaviour.
   a. genes
   b. experience
   c. nature
   d. predestination

3. The school of psychology whose goal was to identify the basic elements of experience was called:
   a. experientialism
   b. dualism
   c. functionalism
   d. structuralism

4. Which of the following was most closely associated with the structuralist school of psychology?
   a. Titchener
   b. James
   c. Descartes
   d. Watson

5. Nature is to _____ as nurture is to _____.
   a. environment/genes
   b. conscious/unconscious
   c. genes/environment
   d. unconscious/conscious

6. Watson and Skinner both contributed to which school of psychology?
   a. functionalism
   b. cognitive
   c. social-cultural
   d. behaviourism

7. The School of Structuralism was established by
   a. Wilhelm Wundt
   b. JB Watson
   c. Elton Mayo
   d. William James

8. The famous book 'Principles of Psychology is written by
   a. Wilhelm Wundt
   b. JB Watson
   c. Elton Mayo
   d. William James

9. The behaviourist school of psychology was founded by
   a. JB Watson
   b. Wertheimer
   c. Freud
   d. Maslow

10. The first psychological department in India was set up in
    a. 1949
    b. 1953
    c. 1916
    d. 1848

UNIT –II (a)

1. What among the following factors influence sustained attention?
   a. Sensory modality
   b. Clarity of stimuli
   c. Spatial uncertainty
   d. All of the above

2. How many different stimuli we register using the seven sense organs?
   a. Ten
   b. Fourteen
   c. Eleven
   d. Nine

3. Focusing of awareness on certain specific objects while excluding others for the moment is called as?
   a. Alertness
   b. Concentration
   c. Search

4. Which of the following is an internal factor affecting the process selective attention?
   a. Intensity of stimuli
   b. Size of stimuli
   c. Interest
   d. Repetition of stimuli

d. Readiness

5. Completing your assignments while listening to music' is an example of?
   a. Selective attention
   b. Sustained attention
   c. Concentration
   d. Divided attention

6. Attention is focusing of consciousness on a particular object." This definition is given by-
   a. Edward Titchener
   b. William James
   c. Ross
   d. Ebbinghaus

7. Most explanations for visual illusions concentrate on the following:
   a. Replying too quickly when making perceptual judgments.
   b. Our misinterpretation of the visual stimulus.
   c. The fact that people have faulty memories.
   d. Lack of experience with seeing certain types of stimuli.

8. _____ is the process through which the senses detect visual, auditory, and other sensory stimuli and transmit them to the brain.
   a. Perception
   b. Difference threshold
   c. Sensation
   d. Absolute threshold

9. The Muller-Lyer illusion applies best to this real-life image:
   a. Line does not look straight when it is broken up into two parts.
   b. Two faces that look like a vase.
   c. Series of circles that seem to be different sizes.
   d. The inner and outer corners of buildings.

10. The _____ is a measure of the smallest increase or decrease in a physical stimulus that is required to produce the just noticeable difference.
   a. Absolute Threshold
   b. Difference Threshold
   c. Detection Paradigm
   d. Perceptual set

UNIT – II (b)

1. Monocular cue of depth percpection is:
   a. Aerial Perspective
   b. Linear perspective
   c. Gradient of texture
   D. All of the above

2. The minimum value of stimulus to activate a given sensation is called :
   a. Stimulus
   b. Difference limen
   c. Sensation
   d. Absolute limen

3. he perception of movement in a stationary spot is not called
   a. Hallucination
   b. Phi- phenomena
   c. Apparent movement
   d. Stereoscopic movement

4. An example of external factor of attention is :
   a. Memory
   b. Forgetting
   c. Competitive Spirit
   d. Interest

5. One's ability to distinguish find details is called
   a. Sensation
   b. Visual acuity
   c. Perception
   d. Apperception

6. Which among the following theories describes that many stimuli simultaneously enter our receptors creating a kind of 'bottleneck' situation?
   a. Filter Theory
   b. Filter-Attenuation Theory
   c. Multimode Theory
   d. None of the above

7. Which among the following is a monocular cue?
   a. Retinal disparity
   b. Motion parallax
   c. Convergence
   d. Accommodation

8. The difference between not being able to perceive a stimulus and just barely perceiving it is termed:
   a. Weber's Law.
   b. The Absolute Threshold.
   c. The Perceptual Set.
   d. The difference threshold.

9. Who among the following proposed that the brain has the innate capacity for organising perceptions?
   a. Kohler
   b. Koffka
   c. Werthimer
   d. All of the above

10. The stability of the environment as we perceive it is termed as
    a. Perceptual constancy
    b. Perceptual Stability
    c. Perceptual vision
    d. Perceptual organization

UNIT – III

1. Classical conditioning type of learning was first investigated by
   a. BF Skinner
   b. Ivan P Pavlov
   c. Sham Arnold
   d. B Bandura

2. Learning is a
   a. Physical process
   b. Chemical process
   c. Mechanical process
   d. Psychological process

3. Making some orienting reflexes i.e. getting accustomed to the event is involved in following phenomenon
   a. Habituation
   b. Reinforcement
   c. Extinction
   d. Transfer effect

4. Reasons for dropouts in schools is/are
   a. Sensory impairment
   b. Learning disability
   c. Emotional disturbance
   d. All of the above

5. The phenomenon of responding similarly to similar stimuli is known as

6. Escape learning means.

a. Discrimination
b. Generic process
c. Generalisation
d. Spontaneous recovery

a. Learning to escape from danger in life
b. Learning by negative reinforcement
c. Learning by positive reinforcement
d. All of the above

7. The simplest kind of learning is called:
a. Modeling
b. Conditioning
c. Observational Learning
d. Concept learning

8. Change of behaviour due to fatigue drugs or other intoxicants is not considered as:
a. Memory
b. Motivation
c. Learning
d. Adjustment

9. Who among the following psychologists is known as the propagator of the theory concerning trial and error learning?
a. Wolfgang Kohlar
b. Edward L Thorndike
c. Ivan Pavlov
d. Tolman

10. Observational learning is also called:
a. Imitation
b. Social Learning
c. Modeling
d. All of the above

UNIT -IV

1 Iconic (sight), Echoic (sound) and other senses are related to which stage of memory model?
a. Short-term memory
b. Sensory memory
c. Long-term memory
d. None of these

2. Short-term memory can hold information for how much time?
a. Less than 2 seconds
b. For 30 seconds or less
c. For more than a minute
d. For 20 seconds or less

3. Memory as per Bartlett is which process?
a. Control process
b. Destructive
c. Constructive
d. Priming

4. Memory of rising bicycle or playing violin is measured using:
a. Priming
b. Free recall
c. Flashbulb
d. Schema

5. Which of the following components, Baddeley calls the chief executive of working memory?
a. Second
b. First
c. Third
d. Fourth

6. The capacity of short-term memory can be increased using
a. Amnesia
b. Chunking
c. Meditation
d. Method of Loci

7. Which process function to monitor the flow of information through various memory stores?
   a. Control process
   b. Priming
   c. Encoding
   d. Phonological loop

8. What phenomenon is experienced when one knows a person's name but cannot remember it in the moment?
   a. Tip-of the tongue phenomenon
   b. Recognition error
   c. Forgetting
   d. Retrieval cue

9. We forget because learning new things interference with our memory of what we learned earlier, is example of……
   a. Retrieval
   b. Decay
   c. Interference
   d. Motivation

10. Which of the following is not a system of memory according to the stage model of memory?
   a. Sensory memory
   b. Short-term Memory
   c. Long - term Memory
   d. Working Memory

UNIT – V

1. What is the classification of IQ for gifted children?
   a. 90-110
   b. 110-129
   c. 130-144
   d. 145 and above

2. Who among the following was the first person that devised systematic tests to measure intelligence of children?
   a. Terman
   b. Binet
   c. Thorndike
   d. Wechsler

3. Which theory of intelligence emphasizes the importance of Multiple Intelligence?
   a. Spearman's two-factor theory
   b. Thurstone's Primary Mental ability Theory
   c. Gardner's Multiple intelligence Theory
   d. Cattell's Fluid and Crystallized intelligence Theory

4. Who proposed the theory of fluid and crystalized intelligence?
   a. E.L Thorndike
   b. Raymond Cattell
   c. David Wechsler
   d. Howard Gardner

5. Triarchic theory of development was presented by
   a. Thurston
   b. Sternberg
   c. Guilford
   d. Gardner

6. Intelligence quotient examines a person's.
   a. Chronological age
   b. Mental age
   c. Both a and b
   d. None of the above

7. Formula for IQ?
   a. IQ score = CA/MA
   b. IQ score= CA/100 x MA
   c. IQ score = MA/ CA x 100

8. If IQ test score is 85 then what will be rating?
   a. Average
   b. Borderline
   c. Superior

d. IQ score = CA/ MA x 100

9. In which year the first officially recognized measure of intelligence was introduced?
   a. 1902
   b. 1903
   c. 1904
   d. 1905

d. Retarded

10. The first revision of Simon-Binet scale was given by
   a. Guilford
   b. Thorndike
   c. Terman
   d. None of the above

UNIT – VI

1. Personality is thought to be _____.
   a. short term and easily changed
   b. a pattern of short-term characteristics
   c. unstable and short term
   d. long term, stable and not easily changed

2. The ego defense mechanism in which a person who is confronted with anxiety returns to a more immature behavioural stage is called _____.
   a. Repression
   b. Regression
   c. reaction formation
   d. rationalization

3. Which of the following is not one of the Big 5 Personality Traits?
   a. Creativity
   b. Agreeableness
   c. Conscientiousness
   d. Neuroticism

4. Which theory suggested a three-factor theory of personality?
   a. Gordon Allport
   b. Raymond Cattell
   c. Hans Eysenck
   d. McCrae & Costa

5. The Oedipus complex occurs in the _____ stage of psychosexual development.
   a. Oral
   b. Anal
   c. Phallic
   d. Latency

6. ……..traits show how people from a particular nation or cultural are similar.
   a. Individual traits
   b. Cardinal traits
   c. Surface traits
   d. Common traits

7. In phallic stage, boy develops sensual feelings towards his mother which is known as:
   a. Electra complex
   b. Oedipus complex
   c. Virginia complex
   d. None of the above

8. Which personality trait emphasizes imagination and insight the most out of all five personality traits?
   a. Extra version
   b. Agreeableness
   c. Openness
   d. Neuroticism

9. In Freud's theory……..is the fundamental technique people use to allay anxiety caused by conflicts.
   a. Projection
   b. Reaction Formation

10. The ……is the original source of personality, present in the newborn infant.
   a. Id
   b. Ego

c. Repression
d. Regression

c. Superego
d. None of the above

UNIT – VII

1. ……is the set of forces that energize, direct, and sustain behaviour.
   a. Motivation
   b. Expectancy
   c. Empowerment
   d. Socialization

2. Which of the following is not a "pull" force of motivation.
   a. Availability of training
   b. Performance-level goals
   c. Rewards and compensation
   d. Pressure for high levels of output

3. Who has given the hierarchy of needs hierarchy theory of motivation?
   a. Abraham Maslow …
   b. David McClelland
   c. Victor Vroom
   d. Frederick Herzberg

4. Which of the following is not an internal motivational force?
   a. Goals
   b. Needs
   c. Attitudes
   d. Feedback

5. The basic components of …….are effort, performance, and outcomes.
   a. Equity theory
   b. Goal-setting theory
   c. Expectancy theory
   d. Social cognitive theory

6. Needs cause a psychological state or feeling called a ……..
   a. Drive
   b. Need
   c. Response
   d. Goal

7. Which theory of motivation suggests that people are motivated to maintain an optimal level of arousal?
   a. Arousal Theory
   b. Drive-Reduction Theory
   c. Achievement Theory
   d. Hierarchy of Needs Theory

8. When you undertake an activity for enjoyment to demonstrate competence or to gain skill, your motivation is usually……
   a. Intrinsic
   b. Extrinsic
   c. Both a and b
   d. None of the above

9. Which of the following is a state of tension or arousal produced by a need?
   a. Instinct
   b. Emotion
   c. Drive
   d. Motive

10. The conflict which arises out of two or more equally attractive goals like choosing between two equally attractive jobs is known as:
    a. Approach-Approach conflict
    b. Avoidance- Avoidance conflict
    c. Approach-Avoidance conflict
    d. None of the above

UNIT – VIII

1. The …..Theory says that felt emotion and the bodily reactions in emotion are independent of each other both are triggered simultaneously.
   a. Canon-Bard
   b. James-Lange
   c. Schachter-Singer
   d. None of the above

2. Which emotion is characterized by a physiological response of increased heart rate and adrenaline release?
   a. Fear
   b. Joy
   c. Sadness
   d. Love

3. Which part of the brain is primarily associated with processing emotions like fear and aggression?
   a. Hippocampus
   b. Amygdala
   c. Cerebellum
   d. Thalamus

4. Which theory suggests that emotional experiences are a result of the brain interpreting physical arousal?
   a. James-Lange Theory
   b. Cannon-Bard Theory
   c. Cognitive Appraisal Theory
   d. Schachter-Singer Theory

5. The theory that emotions arise from cognitive appraisal of a situation is known as:
   a. James-Lange Theory
   b. Cannon-Bard Theory
   c. Cognitive Appraisal Theory
   d. Drive-Reduction Theory

6. Which theory of emotion emphasizes cognitive labeling after physiological arousal?
   a. Cannon-Bard Theory
   b. James-Lange Theory
   c. Schachter-Singer Theory
   d. Cognitive Dissonance Theory

7. Which of the following is a complex emotion rather than a basic one?
   a. Anger
   b. Sadness
   c. Pride
   d. Fear

8. Which of the following is an example of physiological arousal in an emotional experience?
   a. Feeling happy
   b. Sweating when nervous
   c. Thinking about the future
   d. Writing a letter

9. Which part of the nervous system is responsible for the fight-or-flight response during emotions like fear?
   a. Central nervous system
   b. Parasympathetic nervous system
   c. Sympathetic nervous system
   d. Somatic nervous system

10. Which of the following brain areas is responsible for forming emotional memories?
   a. Amygdala
   b. Hippocampus
   c. Prefrontal cortex
   d. Thalamus

Answer Key of B.A Semester– I Psychology									
UNIT -I									
1. c	2. b	3. d	4. a	5. c	6. d	7. a	8. a	9. a	10. c
UNIT – II (a)									
1. d	2. a	3. b	4. c	5. c	6. b	7. b	8. c	9. d	10. b
UNIT – II (B)									
1. d	2. d	3. a	4. c	5. b	6. a	7.b	8. d	9. d	10. a
UNIT – III									
1. b	2. d	3. a	4. d	5. c	6. b	7. b	8. b	9.b	10. d
UNIT – IV									
1. b	2. b	3. c	4. a	5. c	6. b	7. a	8. a	9. c	10. d
UNIT - V									
1. d	2. b	3. c	4. b	5. b	6. c	7. c	8. a	9. d	10. c
UNIT - VI									
1. d	2. b	3. a	4. c	5. c	6. d	7. b	8. c	9. c	10. a
UNIT - VII									
1. a	2. d	3. a	4. d	5. c	6. a	7. a	8. a	9.c	10. a
UNIT - VIII									
1. a	2. a	3. b	4. a	5. c	6. c	7. c	8. b	9. c	10. b

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Model Paper
B.A. I (Sem II) EXAMINATION, 2024
(New Course)
BASIC RESEARCH METHODOLOGY& STATISTICS
(A090101T)

Time:3 Hours **Max. Marks: 75**

Section-A **3 Marks each question**

Short answer type questions only.

1.

A. Observation Method or Experimental method
B. Determinants of Attention
C. Relation of Bhagavad Gita and Psychology
D. Difference between Classical and Instrument Conditioning
E. What is sensory memory? Explain its type.
F. Galvanic Skin Response or GSR
G. Discuss the main determinants of Intelligence.
H. Evaluate the role of social factor in the development of Personality.
I. Difference between in Innate and acquired motive.

Section-B **12 Marks each question**

Long answer type questions

(2 out of 4 Question)

(50% coverage of 1 half of syllabus)

2. What do you mean by Psychoanalytic Approach? Describe in detail.

3. Provide a detailed explanation on Laws of Perceptual Organization.

4. What is Motivational Cycle? Give a brief description of the characteristics of the motivation.

5. Explain Schacter Singer Theory of Emotion with Diagram.

Section-C **12 Marks each question**

Long answer type questions

(2 out of 4 Question)

6. Throw light upon the important concept of Allport theory.

7. Explain the Intelligence theory of Guilford.

8. What do you understand by Intelligence? Explain Stenberg and Gardner theory.

9. Define the steps involved in creativity. Describe the various measurement techniques use for Creativity.