

# { Psychology }

## Question # 1

What is psychology and why is it a science of behaviour. Also explain different schools of thought in psychology?

## { Solution }

The term psychology has been derived from the Greek word Psyche meaning "mind" and logos meaning "study". Earlier psychologists believe that psychology was the study of behaviour and mental processes.

### Definition of Psychology

The dictionary of Cambridge defined psychology as

"The study of mind including consciousness, perception, motivation, behaviour, the biology of nervous system in relation to mind, scientific methods of studying mind, cognition, social interaction and individual

differences and the application of these approaches in solving practical issues in organization and commerce and especially to the alleviation of suffering."

In the words of R S Feldman

"Psychology is the study of behaviour and mental processes"

### Psychology as a Science of behaviour

Early psychologist confined psychology to the study of mind only. In the early part of this century, psychologists dropped mind and focused on behaviour. Two outstanding psychologist responsible for this change were John B. Watson and William McDougler. They argued that unlike mind behaviour is factual, concrete and observable. This change was generally welcomed. Many psychologists adopted this approach although they cannot be called as faithful followers of Watson.

### Observable vs unobservable behaviour

A group of psychologists

even went beyond suggesting that psychology should deal with unobservable behaviours as well. It includes feelings and emotion which are embedded in an individual's unconscious, from which an individual himself was unaware of. Psychologist like Sigmund Freud adopted this approach and emphasized the role of childhood emotion and aggression in defining an individual's behaviour.

Hence psychology is defined as a science of behaviour and mental processes.

## Schools of thought in psychology

When psychology emerged as a proper science various schools of thought emerged. These schools tried to dominate each other in order to set the direction of future research in psychology. Following are the schools of thought in psychology

### a) Structuralism

Structuralism emerged as the first school of thought in psychology. It was advocated

by the founder of first psychological lab William Wundt.

Structuralism focuses on breaking complex mental processes into simple elements. Psychologist used a technique called introspection. The term structuralism was coined by Wundt student Edward B. Titchner.

#### Notable thinkers

- ① William Wundt
- ② Edward B. Titchner

#### Strengths

- ① First school of psychology
- ② Influenced experimental psychology

#### Weakness

- ① Use of introspection led to unreliable result
- ② Focused too much on internal behaviour which is not observable

#### b) Functionalism

Functionalism was formed in response to structuralism and was heavily influenced by the work of William James and the evolutionary theory of

Charles Darwin. Instead of focusing on elements of consciousness, functionalists focused on elements of consciousness.

### Notable thinkers

- ① William James
- ② John Dewey
- ③ Harvey Carr

### Criticism

"It is literature. It is beautiful but it is not psychology"  
(William Wundt)

### Strength

- ① It influenced behaviourism
- ② It influenced educational system
- c) Behaviourism

This school of thought focused on observable behaviour. It takes into account the influence of environment on an individual's behaviour. According to behaviourism, any behaviour can be learnt through reinforcement. Theories of classical and operant.

Learning are dominant in this school of thought.

### Notable thinkers

- ① Ivan Pavlov
- ② B.F Skinner
- ③ Edward Thorndike

### Strength

It is based on observable behaviour

### Weakness

- ① This school of thought has one dimensional approach. It does not take into account free will and motivation
- ② It relies too much on reinforcement.
- ③ Does not explain why animals or humans change their behaviour when new information is introduced.

### d) Psychoanalysis

This school of thought primarily focuses on unconscious processes from which an individual himself

is unaware of. Sigmund Freud, a notable psychologist of this school of thought believes that mind is composed of id, ego, and super ego. Most of the theories of this school are based on clinical testing making them difficult to generalize to larger population.

### Notable thinkers

- ① Sigmund Freud
- ② Anna Freud
- ③ Erik Erikson

### Strengths

- ① Focused on unconscious processes
- ② Most of the theories of this school of thought are still prevalent today. For example Freud's psychosexual stage theory and Erikson's psychosocial stage theory
- ③ It opened a new perspective on psychological illness, suggesting that talking to an expert can help relieve psychological symptoms.

### Criticism

- ① Based on clinical observations and not empirical research.
- ② Focused too much on unconscious processes.

### e) Gestalt Psychology

It was founded by Max Wertheimer. This school of thought believes that the whole is greater than the sum of its parts. It focuses on whole instead of each single element of human mind. Max noticed that series of perceptual images in rapid sequences creates an ~~image~~ impression of motion even when there is none. This is known as phi phenomena. This school of thought focuses on perception.

### Notable thinkers

- ① Max Wertheimer
- ② Kurt Koffka
- ③ Wolfgang Kohler

### Strength

Purely worked on perception

## Criticism

- ① Did not take into account unconscious processes
- ② Focused too much on perception.

## 2) Humanistic psychology

This school of thought emphasized the role of individual in his growth and self-actualization. It takes into account factors of motivation and free will.

### Notable thinkers

- ① Abraham Maslow
- ② Carl Rogers
- ③ Rollo May

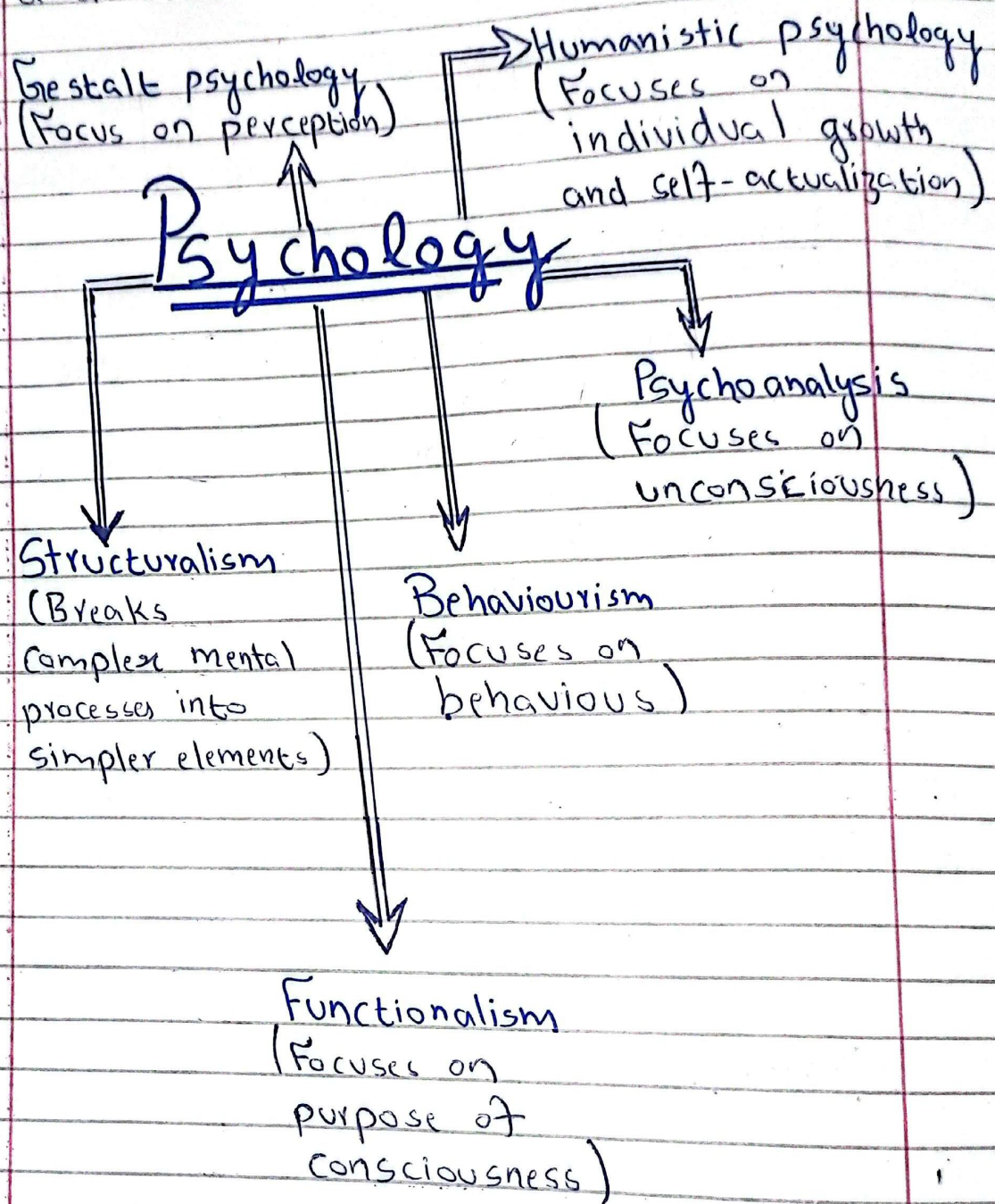
### Strength

- ① Emphasized individual
- ② Takes environment into account
- ③ Helped remove stigma attached to therapy

### Criticism

- ① Too subjective

2) observations rely on single individuals and cannot be verified



{ Schools of thought in psychology }

## Question #2

What are the parts and functions of the Brain?

### Solution

The crowning glory of the nervous system is the brain. It is located in the skull. It is protected by a hard boney structure called the meninges. It is also bathed in special nutritive soup of it's own called cerebrospinal fluid

### Structure of Brain

The brain is divided into three parts i.e Hindbrain, mid brain, and fore brain

#### Hind brain

The Hind brain consist of cerebellum and two structures found in the lower part of the brain i.e medulla and pons.

The medulla attached to the spinal cord controls largely unconscious function such as

blood circulation, breathing etc. The pons include bridge of fibre that connects brainstem to the Cerebrum. The pons is also involved in the functions such as regulating sleep and arousal.

### Function

The cerebellum is a large and deeply folded structure located adjacent to the back surface of the brain. It is involved in movement and equilibrium. Although the commands of movement comes from higher centres of the brain, the cerebellum plays an important role in organizing these commands. Damage to cerebellum disrupts fine motor skills such as writing, typing, or playing a musical instrument.

### Mid brain

Mid brain is the segment of brain which lies between Hind brain and forebrain.

It contains an area which focuses on integrating

Sensory processes such as hearing and vision. An important system of dopamine releasing neurons that project into various parts of the brain originates from this region. Dopamine is involved in memory, attention, and movement. Low production of dopamine may result in parkinson disease. Low production of dopamine is caused by degeneration of this area.

### Function

Running through both the hind brain and mid brain is the reticular formation. Located at the central core of the brain stem the reticular formation contributes to the modulation of muscle reflexes, breathing and pain perception. However, it is best known for its role in arousal. Activities in the ascending fibre of reticular formation may lead to arousal.

### Forebrain

The forebrain is one of the largest part of the

brain. It consist of important structures such as Hypothalamus, thalamus, Limbic system and Cerebrum.

The thalamus, hypothalamus and limbic system all these structures are located at top of the brain. Above them is cerebrum - the complex seat of thought. It consist of a highly wrinkled structure known as Cerebral Cortex. It looks like a cauliflower.

### Thalamus

It is the structure in forebrain through which all sensory information must pass (except smell) to reach to the Cerebral Cortex.

The thalamus is made up of cluster of cell. Each cluster is responsible for a specific sensory information. However, it would be wrong to assume thalamus as a passive relay station. It is also involved in integrating and transmission of sensory processes.

## Hypothalamus

It is the structure found in forebrain which deals with the regulation of basic biological drives. It is located below the thalamus. It is the size of a kidney bean. It also control automatic nervous system. It also playing an important role in linking endocrine system and the brain. Along with that it is also involved in basic biological drives including feeding, mating, fighting and fleeing. It also regulates thirst.

## Limbic system

It consist of loosely connected network of structures found at the border between cerebral cortex and lower sub-cortical areas. It contains structure like thalamus, hypothalamus and amygdala. It also contains hippocampus which plays a role in memory process. It's actual role is still a matter of debate. There are other structures which contribute to memory processes and hippocampus

is just a part of a larger and complex system.

### Cerebrum: The complex seat of thought

It is the largest and most complex part of the brain. It includes higher functions such as thinking, remembering, and consciousness itself.

### Cerebral cortex

It is the convoluted outer part of the cerebrum. It is folded and bent so that it can fit inside the limited area of skull. It is divided into two parts i.e. left hemisphere and right hemisphere.

### Cerebral Hemisphere

As stated above, cerebral cortex is divided into 2 parts i.e. left hemisphere and right hemisphere. The left hemisphere controls the right side of the body and right hemisphere controls the left side of the body. These hemispheres are separated by a longitudinal fissure which runs to the back of the brain.

This fissure descends to thick band of fibre known as corpus callosum. Furthermore each cerebral cortex is divided into four halves known as lobes.

### Occipital lobe

It is present at the back of the head. It consists of the area where most of the visual signals are sent and visual processing is begun. This area is also called primary visual cortex.

### Parietal lobe

It is present at the front of occipital lobe. It includes area which registers sense of touch. It is also called primary somato sensory cortex.

### Temporal lobe

It consists of area where most of the auditory signals are sent and auditory processing is begun. It is also known as primary auditory cortex. Damage to this area can impair comprehension of speech and language.

## Frontal lobe

It consists of an area which is involved in movement of muscle. It is also known as primary motor cortex. Thus more of the cortex is given to parts over which we have fine control and such as finger and tongue. It also contains a portion to the front known as prefrontal cortex. It amounts for 28% of the cerebral cortex. It controls attention, planning etc.