BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – B.Sc.(PSY)-Hons-2023
Course Name – Biological Basis of Behaviour
Course Code - BPY30107
(Semester III)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A
(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Identify from the following a non-human subject used in biopsychology research.
a) Whale
b) Elephant
c) Giraffe
d) Rat

(ii) Indicate why using human subjects is advantageous in biopsychology research.
a) Human subjects can readily provide their subjective experiences.
b) Human subjects are free to use.
c) Human subjects do not require ethical clearance.
d) Human subjects are more powerful than animal subjects.

(iii) Identify the chief problem of case studies.
a) It does not provide information about life history.
b) It is costlier to conduct.
c) It takes a long time to conduct.
d) The results are not generalizable.

(iv) Identify which one of the following is an X ray based technique.
a) PET scan
b) MRI
c) Cerebral Angiography
d) TMS

(v) Select the method from the following that does not involve injecting dyes in the body.
a) Cerebral Angiography
b) PET scan
c) Contrast CT scan
d) fMRI

(vi) Select the compound that is injected in the body for PET scan.
a) Chlorofluorocarbon
b) Methyl oxalate
c) Mercury dioxide
d) Fluorodeoxyglucose

(vii) Identify the primary function of neurons.
a) To transmit genetic information
b) To conduct electrical impulses throughout the body
c) To store nutrients
d) To provide structural support to the nervous system

(viii) Recall the part of the neuron that receives incoming signals from other neurons.

a) Axon
b) Soma
c) Dendrites
d) Myelin Sheath

(ix) Recall the name of the fatty substance that insulates axons and speeds up electrical transmission.

a) Synapse
b) Myelin
c) Neurotransmitter
d) Receptor

(x) Identify the glial cell that is responsible for forming the myelin sheath in the central nervous system.

a) Schwann Cells
b) Astrocytes
c) Microglia
d) Oligodendrocytes

(xi) Recall the resting membrane potential of a typical neuron.

a) +70mV
b) -70mV
c) +40mV
d) -20mV

(xii) Identify the point of communication between two neurons.

a) Synapse
b) Axon hillock
c) Node of Ranvier
d) Myelin Sheath

(xiii) Identify the role of nodes of Ranvier in neuronal conduction.

a) They provide nutrients to neurons.
b) They allow faster transmission of action potentials by enabling saltatory conduction.
c) They store neurotransmitters.
d) They serve as receptors for neurotransmitters.

(xiv) Recall the ion that is primarily responsible for the release of neurotransmitters from the presynaptic terminal.

a) K+
b) Ca++
c) K+
d) Cl-

(xv) Recognize the type of neuron that transmits signals from the central nervous system to muscles.

a) Sensory neuron
b) Motor neuron
c) Interneuron
d) Glial cells

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Summarize the role of Thyroxine (T4) in the body. (3)
3. Explain how excessive cortisol can affect mood and cognition. (3)
4. Describe synaptic plasticity. (3)
5. Define anterograde and retrograde amnesia with suitable examples. (3)
6. Infer the role of hyperthyroidism on mood and cognition. (3)

OR

Report the impact of thyroid hormone imbalance on sleep patterns. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Classify the different classes of hormones in the vertebrate organisms. (5)
8. Discuss the role of different brain structures in the formation of new memories. (5)
9. Describe the process of memory consolidation focusing on the brain regions and cellular mechanisms involved. (5)
10. Infer the personality and behavioural alterations that can happen secondary to frontal lobe injury. (5)

11. Evaluate the concept of positive and negative symptoms in the context of frontal lobe dysfunction. (5)
12. Hypothesize how the anterior and posterior pituitary are controlled. (5)

OR

Compile the different types of signals that regulate hormone release. (5)

****