

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION DECEMBER 2022
(Third Semester)

Branch – PSYCHOLOGY

PHYSIOLOGICAL PSYCHOLOGY

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

- 1 A complex behaviour that is rigidly patterned throughout a species and is unlearned is called
 - (i) Imprinting
 - (ii) Instinct
 - (iii) Intuition
 - (iv) Transmutation
- 2 This is referred to as the glue of the nervous system; this cell dysfunction could contribute to various neurological disorders, such as autism, schizophrenia, pain, and neurodegeneration
 - (i) Ependymal cells
 - (ii) Oligodendrocytes
 - (iii) Microglial cells
 - (iv) Astrocytes
- 3 Nutrigenomics and _____ are the disciplines that study how food affects a person's genes and how a person's genes affect the way the body respond to food
 - (i) Nutrigenetics
 - (ii) Nutraceuticals
 - (iii) Nutrigenics
 - (iv) Nutraceuticals
- 4 In Ayurveda, all functions of the nervous system are represented through one of the following Dosha
 - (i) Vāta
 - (ii) Srota
 - (iii) Pitta
 - (iv) Kapha
- 5 What does fTCD (in neuro-imaging technique) refers to?
 - (i) Functional transcephalonal Doppler ultrasound (fTCD)
 - (ii) Functional transcarotid Doppler ultrasound (fTCD)
 - (iii) Functional transcerebral Doppler ultrasound (fTCD)
 - (iv) Functional transcranial Doppler ultrasound (fTCD)

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

- 6 a List down the possible neurotropic effects (cognitive and behavioral problems) of aspartame/phenylalanine.
OR
b Briefly discuss the Mendel's law of segregation and law of dominance.
- 7 a Present a brief note on the phases of neural development.
OR
b Explicate the principal afferent and efferent pathways of the cerebellum.
- 8 a Explain the types of intercellular signaling.
OR
b Clarify the cellular basis of memory for addiction.
- 9 a Exemplify the role of synergistic hormone.
OR
b From the light of Ayurveda, explain how each of the Doshas affect the Dhatus.

Cont...

- 10 a Outline the Hebb's theory of learning and neuronal growth.
OR
b Why is fMRI predominantly used in Psychology?

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a How would genome editing affect the human society, positively or otherwise?
OR
b Elucidate the fundamental argument of Selfish Gene theory? Why this theory is considered controversial?
- 12 a Discuss the functional lateralization and its relationship to Callosal connectivity in the human brain.
OR
b Clarify how Anaesthesia affects the autonomic nervous system.
- 13 a Explain the role of agonist and antagonist drug in the treatment of neurological / mental health issues.
OR
b How is nerve impulse transmitted across synapse? What are the 4 steps to synaptic transmission?
- 14 a Give an overview of the Cell signaling and its form.
OR
b Explain Tridosha theory. Outline the steps (mentioned in Ayurveda) through which diseases develop as a result of accumulation of the doshas.
- 15 a Why Deep learning Artificial Intelligence / Deep neural networks can easily be fooled?
OR
b Explain briefly the use of the following brain imaging techniques, and the Bio-electrical signals measuring techniques: a) PET, b) SPECT, c) EEG, and d) EMG

Z-Z-Z

END