

M.Sc. S.Y. (Zoology) (C.B.C.S. Pattern) Sem-IV  
**ZOO-XIV / PSCZOOT14.4-Special Group-Animal Physiology-III**  
**(Physiology of Brain, Nerve And Muscle)**

P. Pages : 1

Time : Three Hours



**GUG/S/19/11432**

Max. Marks : 80

- Notes :
1. All questions are compulsory.
  2. All questions carry equal marks.
  3. Draw neat labelled diagram wherever necessary.

1. Write an essay on brain stem, indicating the functions attributed to each area. 16

**OR**

Write notes on :

- a) Compare slow wave and paradoxical (REM) sleep.
- b) Discuss the functions of each of the following :
  - i) Astrocytes
  - ii) Oligodendrocytes
  - iii) Ependymal cell
  - iv) Microglia

2. Write an essay on ultra structure of neuron. 16

**OR**

Write notes on :

- a) Give an account on generation of action potential.
- b) Describe the sequence of events that occur during propagation of nerve impulse.

3. Enlist and describe the functions of neuropeptides. 16

**OR**

Write notes on :

- a) Explain the events involved in chemoreception.
- b) Give an account on biosynthesis and storage of GABA and serotonin.

4. Describe the structure of skeletal muscle. Add a note on banding pattern. 16

**OR**

Write notes on :

- a) Explain twitch summation and tetanus.
- b) Compare isotonic and isometric contractions.

5. Attempt the following. 16

- a) Cerebellum
- b) Neuronal excitability
- c) Parkinson disease
- d) Neuromuscular junction

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