

Roll No. ....

**D-1005****M. Sc. (Fourth Semester) (Main/ATKT)****EXAMINATION, May-June, 2020**

ZOOLOGY

Paper Second

**(Neurophysiology)***Time : Three Hours ]**[ Maximum Marks : 80***Note :** Attempt all Sections as directed.**Section—A**

1 each

**(Objective/Multiple Choice Questions)****Note :** Attempt all questions.

Choose the correct answer :

1. Which portion of the neuron releases neurotransmitters ?
  - (a) Axon hillock
  - (b) Axon terminals
  - (c) Cell body
  - (d) Schwann cells

2. Which part of neuron contributes to rapid transmission of action potentials on a perimpharal nervous system ?
  - (a) Axon
  - (b) Axon hillock
  - (c) Nodes of ranvier
  - (d) Dendrites
3. What is the role of Schwann cells in neurotransmission ?
  - (a) Thermal insulation of neuronal axon
  - (b) Enhance the speed of the action potential
  - (c) Limit the speed of action potential
  - (d) Protect the neuronal soma from trauma
4. All the spinal nerve in PNS are classified as :
  - (a) Motor neuron
  - (b) Sensory neuron
  - (c) Mixed neuron
  - (d) None of these
5. Which of the following carries impulses to the cyton ?
  - (a) Axon
  - (b) Dendrites
  - (c) Ranvier
  - (d) Myelin sheath

**P. T. O.**

[ 3 ]

D-1005

6. The skin on the back of head, neck shoulders, arms and hands are covered by :
- (a) Cervical dermatomes
  - (b) Thoracic dermatomes
  - (c) Lumber dermatomes
  - (d) Sacral dermatomes
7. The lumber dennatomes covers the skin of :
- (a) Lower back and front of the leg.
  - (b) Inner arm, chest, abdomen.
  - (c) Head, neck, and arms.
  - (d) Genital and and region.
8. A myotome is a group of muscles innerveted by a :
- (a) Single cronial nerve
  - (b) Single spinal nerve
  - (c) Paired spinal nerve
  - (d) All of these
9. Which of the following dermative innervates to the lower jaw ?
- (a) V-1 : Ophthalmic
  - (b) V-2 : Maxillary branch
  - (c) V-3 : Mandibular
  - (d) All of these

[ 4 ]

D-1005

10. Cerebrospinal fluid is produced by :
- (a) Cavity of brain
  - (b) Meninges
  - (c) Hypothalamus
  - (d) Cerebral cortex
11. Meninges functions mainly as :
- (a) To protect the central nervous system
  - (b) To protect the spinal cord
  - (c) To produce cerebrospinal fluid
  - (d) All of the above
12. The specialized ciliated epithelial tissue 'Ependyma' is found in :
- (a) Pia mater
  - (b) Dura mater
  - (c) Cerebral cortex
  - (d) Neural canal
13. Which cranial meninges is close to the brain tissue :
- (a) Dura mater
  - (b) Pia mater
  - (c) Arachnoid mater
  - (d) Skill tissue

P. T. O.

[ 5 ]

D-1005

14. The protein carrier in the membrane called "Sodium Potassium Pump" pumps :
- (a)  $\text{Na}^+$  out,  $\text{K}^+$  in
  - (b)  $\text{Na}^+$  in,  $\text{K}^+$  out
  - (c)  $\text{Na}^+$  and  $\text{K}^+$  in
  - (d)  $\text{Na}^+$  and  $\text{K}^+$  out
15. Gustatory receptors are specialized in electing .....
- (a) Taste
  - (b) Light
  - (c) Smell
  - (d) Touch
16. EEG is one of the main diagnostic test for :
- (a) Changes in heart activities
  - (b) Changes in brain activities
  - (c) Changes in heart and brain activities
  - (d) Changes in pulmonary activities
17. The fluid inside axon is known as :
- (a) Cytoplasm
  - (b) Neuroplasm
  - (c) Tissue fluid
  - (d) Axoplasm

P. T. O.

[ 6 ]

D-1005

18. Alpha waves are rhythmic waves occurring at a frequency between :
- (a) 5-8 cycles per second
  - (b) 10-12 cycles per second
  - (c) 14-16 cycles per second
  - (d) 20-22 cycles per second
19. Terminal boutons are found in :
- (a) Post-synaptic neuron
  - (b) Axon
  - (c) Cyton
  - (d) Presynaptic neuron
20. Disorder characterized by a graded loss of reasons and memory lapses is :
- (a) Dementia
  - (b) Creutzfeldt-Jakobs disease
  - (c) Trauma
  - (d) Alzheimer's disease

Section—B

2 each

(Very Short Answer Type Questions)

Note : Attempt all questions. Word limit 1 to 2 sentences.

1. What is Schwann cells ?
2. What is synaptic cleft ?

[ 7 ]

D-1005

3. Define receptor endings.
4. Define preganglionic neuron.
5. Define multipolar neuron.
6. Define learning.
7. Name any *five* stimulants.
8. Name any *five* neurotransmitters.

**Section—C**

3 each

**(Short Answer Type Questions)**

**Note :** Attempt all questions. Word limit-75 words.

1. What is Myotome ?
2. Define synaptic transmission.
3. Define spinal reflexes.
4. Define sympathetic nervous system.
5. What is meninges ?
6. What is Broca's area ?
7. Define nerve impulse.
8. What is Cranial Trauma ?

**Section—D**

5 each

**(Long Answer Type Questions)**

**Note :** Attempt all questions. Word limit 150 words.

1. Explain the degeneration of nerve fibre.

*Or*

Explain the nerve impulse conduction in axon.

[ 8 ]

D-1005

2. Explain the dermatomes and myotomes.

*Or*

Give a detailed account of spinal nerves.

3. Explain the structure of brain.

*Or*

Define meninges and their functions.

4. Explain the electroencephalogram (EEG).

*Or*

Explain reflex action.

D-1005

P. T. O.