



WEST BENGAL STATE UNIVERSITY

B.Sc. Honours 2nd Semester Examination, 2021

PHYACOR03T-PHYSIOLOGY (CC3)

PHYSIOLOGY OF NERVE AND MUSCLE CELLS

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.
All symbols are of usual significance.*

Answer any five questions from the following

8×5 = 40

1. (a) Describe the histological structure of a neurone with labeled diagram. 3
(b) Briefly describe the physiological functions of neuroglial cells. 3
(c) What do you mean by bipolar neurons? 2
2. (a) Explain the ionic basis of different stages of action potential of an excited nerve fibre. 6
(b) What is electronic potential? 2
3. (a) Briefly discuss about the refractory period of nerve fibre. 3
(b) Write the differences between Chronaxie and Rheobase. 2
(c) State the difference between graded potential and action potential. 3
4. (a) Briefly discuss about the neurotrophins. 3
(b) Explain 'all or none response' of nerve fibre. 3
(c) Give example of two neuromuscular blockers. 2
5. (a) Describe the cross-bridge cycling process of skeletal muscle. 5
(b) Write the differences between isotonic and isometric contraction. 3
6. (a) Explain the ionic basis of tetanus of a muscle fibre. 3
(b) What are the differences between single and multiunit smooth muscle? 3
(c) Why sarcomere is called 'contractile unit' of muscle fibre? 2

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| 7. (a) Discuss about the sequence of events that take place during impulse transmission through neuromuscular junction. | 6 |
| (b) What is Lambert-Eaton syndrome? | 2 |
| 8. (a) Describe the regeneration process in a nerve fibre. | 3 |
| (b) Classify the receptors on the basis of their location. | 3 |
| (c) Write down the names of two inhibitory neurotransmitters. | 2 |

N.B. : *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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