

U.G. 4th Semester Examination - 2022

PHYSIOLOGY

[PROGRAMME]

Generic Elective Course (GE)

Course Code : PHYSIOL-G-GE-T-2
(Physiology of Nerve and Muscle Cells)

Full Marks : 40

Time : 2½ Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*

GROUP-A

1. Answer any **five** questions: $2 \times 5 = 10$
- What causes rigor mortis?
 - What is the importance of troponin in muscle contraction?
 - State the function of sarcotubular system.
 - Define IPSP.
 - What do you mean by synapse?
 - Name different types of glial cells in the CNS.
 - What are c-fibres?

[Turn Over]

2. Answer any **two** questions: $5 \times 2 = 10$
- What do you mean by polarization and depolarization of a living cell membrane?
 $2+3=5$
 - Describe the mechanism of generation and conduction of impulse through a nerve fibre. 5
 - Enumerate the differences existing in skeletal muscle, smooth muscle and cardiac muscle. 5
 - Describe the structure of a sarcomere in skeletal muscle with diagram. 5

GROUP-C

3. Answer any **two** questions: $10 \times 2 = 20$
- Give the ultramicroscopic structure of a neuromuscular junction and describe the mechanism for neuromuscular transmission. $5+5=10$
 - Discuss the molecular mechanism of synaptic transmission with a special reference to the function of Ca^{2+} . $7+3=10$

- c) Describe the events of cross-bridge cycle with diagrammatic illustration. $6+4=10$
- d) Discuss the following: $2\frac{1}{2}\times 4=10$
- i) Denervation hypersensitivity
 - ii) Pacemaker potential
 - iii) Neurotrophius
 - iv) Single-unit and multi-unit smooth muscle
