

U.G. 2nd Semester Examination - 2023**PHYSIOLOGY****[HONOURS]****Course Code : PHYSIOL-H-CC-T-03****(Physiology of Nerve & Muscle Cells)****Full Marks : 40****Time : $2\frac{1}{2}$ 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 from the following questions:

 $2 \times 5 = 10$

- a) What are orthodromic and antidromic conduction?
- b) What do you mean by denervation hypersensitivity?
- c) State two important functions of 'Neurotrophins'.
- d) What is synaptic cleft?
- e) Define resting membrane potential.

[Turn Over]

- f) What is "all-or-none" law?
- g) State any two differences between red and white muscle.
- h) What is synaptic vesicle cycle?

GROUP-B

2. Answer any two from the following questions:

5×2=10

- a) Write the molecular basis of refractory period.
- b) Briefly describe the process of Wallerian degeneration.
- c) What are the criteria of regeneration? Describe the regeneration process in a myelinated nerve fibre. 2+3=5
- d) Classify nerve fibres according to Erlanger-Gasser.

GROUP-C

3. Answer any two from the following questions:

10×2=20

- a) What do you mean by E-C coupling? Discuss the molecular mechanism of contraction and relaxation of skeletal muscle fibre with a suitable diagram. 3+7=10

- b) Explain with a suitable diagram the process of synaptic transmission. 10
- c) Describe the origin and propagation of action potential in cardiac muscle. 6+4=10
- d) Write down the electrical and mechanical properties of cardiac muscle. 6+4=10