

Ex/SC/PHY/PG/CBS/TH/201/2025

**MASTER OF SCIENCE EXAMINATION, 2025**

**(2<sup>nd</sup> Year, 1<sup>st</sup> Semester)**

**PHYSICS**

**PAPER : PHY/PG/CBS**

**Biophysics (I)**

*Time : Two hours*

*Full Marks : 40*

Answer any **two** questions from each group

**GROUP—A**

1. (a) Make a comparative study between eye and camera.  
4 (CO1)
- (b) What are the photoreceptors available in our eye?  
Explain the structure and activities of the photoreceptors  
found in our eye. 4+2 (CO1)
2. (a) What are saturated and unsaturated fatty acids? Explain  
the reason behind the hydrophobic nature of lipid.  
2+1(CO1)
- (b) Explain the ion concentrations inside and outside of a  
typical mammalian cell. How these ions take part at the  
time of nerve cell activities? 2+5 (CO1)

PHY-1179

[ Turn Over ]

**( 2 )**

3. (a) How many types of muscles are available in human  
body? 3 (CO3)
- (b) What is sarcomere? Explain the activities of skeletal  
muscle with suitable diagram. 2+5 (CO3).

**GROUP—B**

1. (a) Discuss Watson and Crick's DNA Model? 5 (CO2)
- (b) Discuss in brief the process of Polymerase Chain  
Reaction (PCR) for DNA amplification. 5 (CO2)
2. (a) What do you mean by Codon? What is codon  
degeneracy? 2+2 (CO2)
- (b) Describe how protein is synthesized in prokaryotic  
system. 6 (CO2)
3. (a) Determine the molecular weight of a macromolecule  
by Diffusion technique? 6 (CO4)
- (b) Discuss the biological implications of Diffusion and  
Osmosis. 2+2 (CO4)

★ ★ ★

PHY-1179

XX24(113)—25