

1233

Your Roll No.....

B.Sc. (Hons.)/III

A

PHYSICS - Paper XXII (ii)
(Bio-Physics)

Time : 3 hours

Maximum Marks :38

(Write your Roll No. on the top immediately on receipt of this question paper.)

All questions are compulsory.

1. Attempt any five of the following : 2 x 5 = 10
- Differentiate between hydrophobic and hydrophilic interaction.
 - Enzymes are essentially large sized macromolecules ? Comment.
 - What are molecular chaperones ?
 - Discuss the structural determination of bilayer.
 - What is denaturation ? How can the protein be denaturated.
 - What are Nodes of Ranvier and Myelinated sheaths.
2. Answer any three of the following : 4 x 3 = 12
- Describe the mechanism of Photoreception.
 - Explain CD spectroscopy and compare it with ORD spectroscopy.
 - What does Chargaff rule say ? Which bond is stronger AT or GC ? What does high GC content tell about the nature of template DNA ?
 - Write short note on supercoiling of DNA. Discuss the L, T and W numbers.
3. Discuss the Watson and Crick model of DNA. Differentiate between DNA and RNA. Give biological significance of both. 08

OR

What is Raman effect ? Discuss the necessary theoretical background. Discuss any two biological application of Raman spectroscopy. Distinguish between Raman spectroscopy and Infra Red spectroscopy. 08

4. Write short notes on any two of the following : 4 x 2 = 08
- Mechanism of excitation and transmission of nerve impulse.
 - Structure and role of biological membranes.
 - β - pleated sheets of proteins.