

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 154654

Roll No.

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B.Tech.

(SEM. VI) THEORY EXAMINATION 2013-14

BIOPHYSICS

Time : 2 Hours

Total Marks : 50

Note :— Attempt all questions. Question No. 1 is compulsory.

1. Attempt any two parts of the following : (7×2=14)

- (a) Explain the principle of Florescence spectra and discuss its applications in the field of biology.
- (b) What is infra red spectroscopy ? How does it find application in the field of biological sciences ?
- (c) Write short notes on :
 - (i) Ultra centrifugation
 - (ii) Diffusion processes in biology.

2. Attempt any two parts of the following : (6×2=12)

- (a) What is isoelectric focusing ? Explain SDS-PAGE electrophoresis.
- (b) Write about the working principle of pH meter and its calibration.
- (c) How does Potentiometry works ? Discuss its uses in biological laboratory.

3. Attempt any two parts of the following : (6×2=12)
- (a) What are ORD and CD spectroscopy ? How does it find application in protein engineering ?
 - (b) What are SEM and TEM ? Discuss their role in cell characterization.
 - (c) Describe the working principle of atomic force microscopy in relevance to biological sample characterization.
4. Write short notes on (any two) : (6×2=12)
- (a) Bragg's law
 - (b) Structure factor
 - (c) Electron density map.