2024

Time :As in Programme

Full Marks : 100

The figures in the right-hand margin indicate marks.

*Answer **all** questions.*

Draw labelled diagram wherever necessary.

PART-I

1. Answer all the following Questions. 1x10
   a. What is the minimus distance for the eye to focus any object ?
   b. Flow cytometry uses ____.
   c. Beer Lambert's law gives the relation between which of the factor ?
   d. Who invented centrifugation ?
   e. In autoradiography, the probe will not have complementarity with ____.
   f. At what speed do you centrifuge blood ?
   g. Colarimeters are used to determine ____ of solutions.
   h. Chromatography is a physical method that is used to separate and analyse ____.
   i. The polymerization of the gel used in PAGE occurs between polyacrylamide and ____.
   j. HPLC can be performed only in ____.

PART-II

2. Answer the following questions in 50 words each. 2x9
   a. Freeze etching
   b. Negative staining

c. C_sCl_2 gradient
d. Auto radiography
e. Shadow casting
f. Flame phatometer
g. Beer Lambert's law
h. TLC
i. AGE

PART-III

3. Answer any eight questions of the followings in 250 words each. 5x8
   a. Cryofixation.
   b. Sucrase density gradient
   c. Sample preparation for electron microscopy.
   d. Analytical centrifugation.
   e. Use of radioisotopes in biological research.
   f. Chlorophylla fluorescence.
   g. Bomb Calorimeter.
   h. Ion exchange chromatography
   i. Molecular sieve chromatography.
   j. X-ray diffraction.

PART-IV

Answer any four of the following questions in 800 words each. 8x4

4. Describe the principle and applications of fluorescence microscopy.
5. Describe the ultracentrifugation techniques and its application in biological research.
6. Explain the principle, components and warming mechanism of Uv-vis spectrophatometer.
7. Discuss the principle and application of HPLC.
8. Give an account of characterization of proteins by SDS-PAGE.