Total No. of Questions : 8]

SEAT No : ____

P 1946

[Total No. of Pages :2

[5324]-202
M.Sc.
BIOCHEMISTRY
BCH - 271 : Techniques for Characterization of Biomolecules
(2013 Pattern) (Semester-II) (Credit System)

Time : 3 Hours] ***[Max. Marks : 50***

Instructions to the candidates:

1) ***Answer to the two sections should be written in separate answer books.***
2) ***Questions No. 4 and 8 are compulsory.***
3) ***Attempt any two questions from Q. 1 to Q. 3 and any two from Q. 5 to Q. 7.***
4) ***Figures to the right side indicate full marks.***

SECTION-I

Biophysical Methods

Q1) Answer the following:

a) What is the principle of zonal centrifugation? **[2]**

b) Describe the applications of diffusion coefficient. **[4]**

c) What are the factors affecting on viscosity? Explain any one in detail. **[4]**

Q2) Attempt the following:

a) Write a note on free radicals and radiolysis of water. **[3]**

b) Describe the theory of X-ray diffraction. **[3]**

c) Describe any one application of sedimentation with example. **[4]**

Q3) Answer the following:

a) Explain the types of radiations used in biochemistry. **[2]**

b) Write a note on autoradiography. **[3]**

c) Describe the factors affecting on sedimentation. **[5]**

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Q4) Attempt any one of the following:

a) Write a note on radiation dosimetry. **[5]**

b) Describe the method for determination of sedimentation coefficient. **[5]**

SECTION-II

Structure determination of Biomolecules

Q5) Answer the following:

a) What is polarization of fluorescence? **[2]**

b) Describe the advantages of atmospheric pressure photoionization. **[4]**

c) Enlist the applications of infrared spectroscopy. **[4]**

Q6) Attempt the following:

a) What are the components of MALDI - TOP - MS? Write the function of any four components in brief. **[3]**

b) Describe any one application of imunosensor. **[3]**

c) Explain any one application of ORD and CD. **[4]**

Q7) Answer the following:

a) Write a note on conductometric biosensors. **[2]**

b) Write any one application of MALDI - TOP - MS in brief. **[3]**

c) Describe the special uses of fluorescence in biology and biochemistry. **[5]**

Q8) Attempt any one the following:

a) Describe the applications of ESR. **[5]**

b) What is LC-MS? Explain the mobile phases used in LC-MS. **[5]**