KNT/KW/16/5135

Bachelor of Science (B.Sc.) Semester–III (C.B.S.) Examination

BIOTECHNOLOGY

(Biophysical Techniques–I)

Paper — II

Time : Three Hours] [Maximum Marks : 50

Note :— (1) **All** the questions are compulsory and carry equal marks.

(2) Draw well labelled diagrams wherever necessary.

1. (a) Discuss deviation of Beer's law. 2½

(b) Write a note on double beam spectrophotometer. 2½

(c) Discuss Chromophore and Auxochrome with example. 2½

(d) What is absorption spectrum ? Give its uses. 2½

OR

Describe the principle and instrumentation of UV-Vis spectrophotometry. 10

2. (a) Give the applications of spectrofluorometry. 5

(b) Describe, briefly applications of UV visible spectrophotometry. 5

OR

(c) Discuss principle of IR spectrometry in detail. 5

(d) Define flame photometry and give its application. 5

3. Explain Gel Filtration chromatography and its application. 10

OR

Describe principle and application of thin layer chromatography. 10

4. Discuss Ion-exchange chromatography. 10

OR

Explain principle and applications of affinity chromatography. 10

5. Solve any **ten** of the following :

(i) What is visible spectrum of light ? 1

(ii) What is Lambda Max ? 1

(iii) What is bathochromic shift ? 1

(iv) What is meant by nebuliser ? 1

(v) Which wavelength shows maximum absorption of Nucleic acid in UV spectrophotometer ? 1

(vi) Name any one fluorescent amino acid. 1

(vii) Name any two gels used in gel filtration. 1

(viii) What is partition coefficient ? 1

(ix) Define R_f value. 1

(x) Give any one application of Ion-exchange chromatography. 1

(xi) Name any two types of resins used in ion-exchange chromatography ? 1

(xii) What is meant by HPLC ? 1