

Bachelor of Science (B.Sc.) Semester–III (C.B.S.) Examination**BIOTECHNOLOGY****Paper—II****(Biophysical Techniques–I)**

Time : Three Hours]

[Maximum Marks : 50

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

(2) Draw well labelled diagrams wherever necessary.

1. Write notes on :

- | | |
|-----------------------------------|----|
| (a) Beer's Law. | 2½ |
| (b) Dual wavelength spectrometer. | 2½ |
| (c) Chromophore and Auxochrome. | 2½ |
| (d) Absorption Spectrum. | 2½ |

OR

Write notes on :

- | | |
|--|----|
| (e) Extinction Coefficient. | 2½ |
| (f) Double beam spectrometer. | 2½ |
| (g) Principle of UV and visible spectrophotometry. | 2½ |
| (h) Colorimeter. | 2½ |

2. Discuss the principle, instrumentation and applications of flame photometry.	10
---	----

OR

Write the applications of UV and visible spectrophotometry.	10
---	----

3. Discuss the principle, procedure and applications of thin layer chromatography.	10
--	----

OR

Describe principle, types and application of paper chromatography.	10
--	----

4. (a) Draw a detailed layout of HPLC.	5
--	---

(b) Discuss application of Ion exchange chromatography.	5
---	---

OR

Describe affinity chromatography in detail.	10
---	----

5. Solve any **ten** :

- | | |
|--|---|
| (i) What is the role of prism in UV spectrophotometer ? | 1 |
| (ii) What is the material of cuvette used in UV region ? | 1 |
| (iii) What is electromagnetic radiation ? | 1 |
| (iv) What is meant by IR ? | 1 |
| (v) What is nebulizer ? | 1 |
| (vi) What is meant by fluorescence ? | 1 |
| (vii) What is distribution coefficient ? | 1 |
| (viii) Name any two types of gels used in gel filtration chromatography. | 1 |
| (ix) Give any one application of gel filtration. | 1 |
| (x) Name the different types of Cationic buffers. | 1 |
| (xi) What is meant by elution in affinity chromatography ? | 1 |
| (xii) What is ligand ? | 1 |