Bachelor of Science (B.Sc.-II) Third Semester OLD

B.Sc. 2382 - Biochemistry Paper-II
(Biophysical and Biochemical Techniques-I)

P. Pages : 2 **GUG/W/18/1255**

Time : Three Hours * 0 9 6 8 * Max. Marks : 50

Notes : 1. All questions are compulsory and carry equal marks.
2. Draw diagrams wherever necessary.

1. Derive the Henderson - Hasselbalch equation for buffer. Describe the mechanism of buffer action. **10**

OR

Describe the principle of flame photometry. Give the basic components of an emission flame photometer.

2. Give an account of protein purification by ion exchange chromatography. **10**

OR

Give details of thin layer chromatography with emphasis on partition principle. procedure and applications.

3. a) Explain the titration behaviour of weak acid (Acetic acid). **2½**

b) Give an account of different types of detectors in spectrophotometer. **2½**

c) What is Rf value? How is Rf value used to identify amino acids? **2½**

d) Write a short note on HPLC. **2½**

OR

e) Explain the meaning of absorption maxima. **2½ x4**

f) Briefly describe the ligands importance in affinity chromatography.

g) Describe the types of gels used in gel filtration chromatography.

h) Describe the construction and use of glass electrode.

4. a) Write a note on physiologically importance buffers. **2½ x4**

b) Describe the use of blank solution in spectrophotometric analysis.

c) Write a note on concept of plate in column chromatography.

d) What is specific and non specific elution?

OR

e) Write a note on Isoelectric pH. **2½ x4**

f) Explain the deviations from Beer's law.

g) Write a note on gas liquid chromatography.

h) Describe exclusion limit and distribution coefficient.

5. Attempt **any ten** of the following. **10**

a) What is pka?

b) Name any two Biochemically importance buffers.

c) At low pH, all amino acids present in -------- form.

d) What are colour enhancer?

e) What is monochromatic and polychromatic light?

f) What is chromophore.

g) Which chromatography separate biomolecules depending upon shape & size?

h) Name any one solvent system used for the sepation of amino acids by paper chromatography.

i) Which chromatography technique uses ionic column material.

j) What is void volume?

k) Which chromatographic technique exploits biological specificity for separation?

l) What is the role of arm in affinity chromatography?

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