

USBCT-C06 - Biochemistry Paper-II : Biophysical and Biochemical Techniques-I

P. Pages : 2

Time : Three Hours



GUG/S/23/11597

Max. Marks : 50

- Notes : 1. All questions are compulsory.
2. All question carry equal marks.

1. What is buffer? Explain the mechanism of buffer action by Henderson-Hasselbalch Equation. **10**

OR

- a) Discuss titration curve of weak acid. **2½**
- b) Write short note on buffer capacity **2½**
- c) Discuss carbonate-bicarbonate buffer system of blood **2½**
- d) Discuss determination of pH by pH meter. **2½**

2. Discuss in detail application of UV-VIS spectroscopy. **10**

OR

- a) Discuss concept of Beer-Lambert law **2½**
- b) Explain the concept of chromophore **2½**
- c) Write short note on monochromator **2½**
- d) Give the application of spectrofluorometry. **2½**

3. Give the principle and applications of gel filtration chromatography. **10**

OR

- a) Write short note on thin layer chromatography. **2½**
- b) Write in short detection techniques for paper chromatography. **2½**
- c) Discuss partition coefficient and nature of forces. **2½**
- d) Write short note on techniques of elution in column chromatography. **2½**

4. Discuss in detail principle and application of affinity chromatography. **10**

OR

- a) Discuss principle of ion exchange chromatography. **2½**

- b) Write a note on types of resins in ion exchange chromatography. 2½
- c) Discuss in short Gas chromatography. 2½
- d) Write short note on HPLC. 2½
- 5.** Attempt **any ten** of the following. **10**
- a) Define isoelectric pH 1
- b) Protein acts as buffer – true or false 1
- c) What do you mean by strength of acid 1
- d) Define extinction coefficient 1
- e) Define auxochrome 1
- f) Give two sources of ultraviolet radiation used in spectrophotometry. 1
- g) Define partition coefficient 1
- h) Define retention time 1
- i) Define mobile phase 1
- j) Give two examples of resin used in ion exchange chromatography. 1
- k) Give full form of GCMS. 1
- l) Give one application of gas chromatography. 1
