



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

1. Derive Henderson – Hasselbalch equation and explain Mechanism of buffer action **10**
OR
- a) Write in brief about Titration curve of Histidine amino acid. **2½**
b) Give the concept of -Buffer capacity **2½**
c) Describe the concept – Isoelectric pH **2½**
d) Write short note on – Biochemically and Physiologically important buffers. **2½**
2. Explain in detail Instrumentation and applications of UV and Visible spectrophotometry. **10**
OR
- a) Give deviation of Beer’s law. **2½**
b) Explain the concept of chromophores in brief. **2½**
c) Give the concept of – absorption spectrum **2½**
d) Write short note on – applications of flame photometry. **2½**
3. Describe in detail paper chromatography. **10**
OR
- a) Write about the principle of gel permeation chromatography. **2½**
b) Explain in brief the concept of plates **2½**
c) Write short note on – partition coefficient. **2½**
d) Describe the concept – distribution coefficient. **2½**
4. How would you effectively isolate a specific enzyme from a mixture of three proteins by affinity chromatography? **10**
OR
- a) Explain in brief the types of resins used in Ion – Exchange chromatography. **2½**
b) Give the concept of specific and non – specific elution in affinity chromatography. **2½**
c) Explain in brief applications of GCMS **2½**
d) Write about Ion – Exchange chromatography applications. **2½**

5. Solve **any 10** out of 12 questions.

10

- 1) What is buffer.
- 2) Is the glass electrode a reference electrode? What is it used for?
- 3) A strong acid has a large K_a value. True or False?
- 4) What is Light Spectrum
- 5) What is Auxochrome?
- 6) Define molar extinction coefficient.
- 7) Name any one adsorbent used in TLC
- 8) What is meant by Void volume?
- 9) Name any two gels used in gel Chromatography.
- 10) What is a Ligand?
- 11) What is spacer in affinity Chromatography?
- 12) What is the use of guard column in HPLC?
