**Enrollment No: _____ Exam Seat No:_____**

# C.U.SHAH UNIVERSITY
## Winter Examination-2022

**Subject Name : Instrumental Methods of Analysis - Theory**

**Subject Code : BP701T** **Branch: B.Pharm**

**Semester: 7** **Date: 21/11/2022** **Time: 11:00 To 02:00** **Marks: 75**

Instructions:
(1) Use of Programmable calculator & any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

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**Q-1** **Attempt the following questions:** **(20)**

**a)** Define the terms: Chromophore and Auxochrome.
**b)** Enlist four differentiate points in between AAS and AES.
**c)** Explain in very short: Resolution and HETP.
**d)** Discuss in very short: Theory of Affinity chromatography.
**e)** Give short explanation on principle of Nepheloturbidometry.
**f)** Prepare a short note on Hollow Cathode Lamp.
**g)** Discuss in short: Retention time and Tailing factor.
**h)** Make an informative note on Electron Capture Detector.
**i)** Write in short about principle involved in Normal Phase Chromatography.
**j)** Enlist different applications of Gel chromatography.

**Attempt the following questions:**

**Q-2** **Attempt any two of following :** **(20)**

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|---|---|---|
| **A** | Draw neat and clean labeled diagram of instrumentation of HPLC. Discuss applications of HPLC. | **10** |
| **B** | Enlist different detectors used in IR spectroscopy. Explain all the detectors in detail with diagrammatic representation. | **10** |
| **C** | Define: Chromatography. Enlist different chromatographic techniques. Write in detail about Paper chromatography. | **10** |

**Q-3** **Attempt any Seven of following :** **(35)**

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|---|---|---|
| **A** | What do you mean by chemical quenching? Explain it with suitable examples. | **5** |
| **B** | State and derive Beer Lambert's law. | **5** |
| **C** | What do you mean by resin? Classify different types of resin. | **5** |
| **D** | What is Gel chromatography? Make a detailed note on it. | **5** |
| **E** | Discuss in detail: Various applications of Gel electrophoresis. | **5** |
| **F** | Explain principle and applications of Thin Layer Chromatography. | **5** |
| **G** | Prepare an informative note on principle and applications of Flame | **5** |

photometry.

| | | |
|---|---|---|
| **H** | Discuss factors affecting Ion exchange chromatography. | **5** |
| **I** | Explain instrumentation of Gas chromatography with neat and clean labeled diagram. | **5** |