

C.U.SHAH UNIVERSITY

Summer Examination-2017

Subject Name: Modern Analytical Techniques

Subject Code: 5PS01MAT2

Branch: M.Pharm.

Semester: 1

Date: 20/03/2017

Time: 10:30 To 01:30

Marks: 70

Instructions:

- (1) Use of Programmable calculator and 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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SECTION – I

Q-1 Attempt the Following questions

- | | | |
|----|--|---|
| a. | What is Guard column? | 1 |
| b. | Define Bathochromic shift | 1 |
| c. | Define Hypsochromic shift. | 1 |
| d. | Name the types of Refractive index detector used in HPLC. | 1 |
| e. | Name the two types of elution technique in HPLC. | 1 |
| f. | Name the types of detector used in GC. | 1 |
| g. | Why do amines absorb at higher wavelength in comparison to alcohols? | 1 |

Q-2 Attempt all questions

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|---|---|---|
| A | Explain Ionization Techniques in mass spectroscopy with emphasis on secondary ionization. | 7 |
| B | Give instrumentation of a HPLC-MS. | 7 |

OR

Q-2 Attempt all questions

- | | | |
|---|--|---|
| A | How number and position of bands is calculated in I.R. spectrum of a compound? | 7 |
| B | Give construction of a FT-IR. What are its advantages over IR? | 7 |

Q-3 Attempt all questions

- | | | |
|---|---|---|
| A | What is thermogravimetry? What is its importance? | 7 |
| B | Give theory and method of RIA. | 7 |

OR

Q-3 Attempt all questions

- | | | |
|---|---|---|
| A | What is the principle of DSC? Give applications of DSC. | 7 |
| B | Write principle and applications of U.V. | 7 |



SECTION – II

- Q-4 Attempt the Following questions**
- a. How do the IR spectra of acetone and ethanol differ? 1
 - b. How DTA helps in preformulation study? 1
 - c. Why stretching frequency in IR gets lowered on hydrogen bonding? 1
 - d. Define Moving boundary electrophoresis. 1
 - e. Define Plate Number. 1
 - f. Define Capacity factor. 1
 - g. Write Bragg's equation. 1
- Q-5 Attempt all questions**
- A What is ion exchange chromatography? Discuss factors affecting the separation in ion exchange chromatography. 7
 - B Discuss Principle and Instrumentation of SFC. 7
- OR**
- Q-5 Attempt all questions**
- A Write short note on HPTLC. 7
 - B What is chemical shift? Discuss factor affecting chemical shift. 7
- Q-6 Attempt all questions**
- A How does ionization carry out in MS? Discuss MALDI & chemical ionization techniques in details. 7
 - B Write the principle, instrumentation and applications of Fluorimetry. 7
- OR**
- Q-6 Attempt all Questions**
- A Explain the principle of DTA .Describe in brief application of DSC. 7
 - B How stationary phase is selected in GLC? What are their essential characteristics? 7

