

C.U.SHAH UNIVERSITY
Winter Examination-2018

Subject Name : Modern Pharmaceutical Analytical Techniques
Subject Code : MQA101T **Branch: M.Pharm (QA)**
Semester : 1 **Date : 26/11/2018** **Time : 02:30 To 05:30** **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.

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

- a) Discuss principle and application of Atomic absorption spectroscopy.
- b) Write a note on X-ray crystallography.
- c) Discuss principle of fluorescence.
- d) Give a note on Autoradiography.
- e) Explain Difference between IR and FTIR.
- f) Give principle of DRD and its application.
- g) Write down the types of Mass Analyzers.
- h) Mention types of ion-exchange resins used in Ion exchange chromatography.
- i) Write analytical application of gel chromatography.
- j) Define Chemical Shifts.

Attempt the following questions:

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

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| A | Discuss on pumps, sample injectors, columns and detectors used in HPLC. | 10 |
| B | Define Quantum numbers and their role in NMR , give a brief on Principle and Instrumentation of NMR. | 10 |
| C | Classify electrophoresis techniques. Discuss its theory and application. | 10 |

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

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| A | Explain Immunoassay techniques and their application. | 5 |
| B | Exemplify chromophores and auxochromes. | 5 |
| C | Give the Application of UV–Visible Spectroscopy in brief. | 5 |
| D | Write on difference between ESR and NMR. | 5 |
| E | Explain the modes of molecular vibrations in IR. | 5 |
| F | Write principle and applications of scanning and transmission electron microscopy. | 5 |
| G | Classify methods of thermal analysis and Define them. | 5 |
| H | Write comparison on GSC with GLC and their application. | 5 |
| I | What is flow cytometry? Name parameters assayed by flow cytometry. | 5 |

