

C.U.SHAH UNIVERSITY
Winter Examination-2019

Subject Name : -Modern Pharmaceutical Analytical Techniques
Subject Code : MPH101T/MQA101T **Branch: M.Pharm (Pharmaceutics, QA)**
Semester : 1 **Date : 02/12/2019** **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.
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Q-1 **Attempt the following questions:** **(20)**

- a) Explain Radio-immunoassay.
- b) Write a note on X-ray crystallography.
- c) Give the applications of optical rotary dispersion.
- d) Enumerate the Applications of GC MS.
- e) What are the advantages of FTIR over IR.?
- f) Write down the principle of mass spectroscopy.
- g) Define Chemical Shifts.
- h) Mention types of ion-exchange resins used in Ion exchange chromatography.
- i) Write analytical application of gel chromatography.
- j) Write down the types of Mass Analyzers

Attempt the following questions:

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

- A** Explain the principle of UV spectrophotometer and discuss the instrumentation of double beam spectrophotometer. **10**
- B** Define Quantum numbers and their role in NMR , give a brief on Principle and Instrumentation of NMR. **10**
- C** Give principle, instrumentation and applications of HPLC. **10**

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

- A** Classify electrophoresis techniques. Discuss its theory and application.. **5**
- B** Explain principle of atomic absorption spectroscopy. What are its applications in analysis? **5**
- C** Give Beer Lambert's law? What are its applications in quantitative analysis **5**
- D** Write on difference between ESR and NMR. **5**
- E** What are different molecular vibrations which occur in IR region **5**
- F** Compare ¹HNMR and ¹³CNMR. Discuss the application of decoupling in structure confirmation **5**
- G** What are Rearrangements which take place in MS. **5**
- H** Write on GSC Vs GLC and their application. **5**
- I** What is flow cytometry? Name parameters assayed by flow cytometry. **5**

