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M.Pharma (Pharmaceutical Chemistry) (2017 & Onwards) (Sem.-1)**MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES****Subject Code : MPC-101T****M.Code : 74663****Time : 3 Hrs.****Max. Marks : 75****INSTRUCTIONS TO CANDIDATES :**

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

- Q1 a) Describe various detectors used in IR spectroscopy. (5)
- b) Write a note on different types of interferences in Atomic Absorption Spectroscopy. (5)
- c) Explain the various factors affecting vibrational frequency. (5)
- Q2 a) What are chemical equivalence and magnetic equivalence in NMR? (5)
- b) Explain Deshielding and anisotropic effect. (5)
- c) Describe principle and application of ^1H NMR. (5)
- Q3 a) Draw schematic diagram of mass spectrophotometer. Describe the working of its different parts. (10)
- b) Explain 'Electron Impact Ionization' in mass spectrophotometry. (5)
- Q4 a) Explain principle and instrumentation in HPLC. (5)
- b) Explain the terms: Ion Exchange Chromatography and Affinity Chromatography. (5)
- c) Write a short note on detectors used in Gas Chromatography. (5)
- Q5 a) Discuss different X-ray diffraction techniques. (5)
- b) Write a note on application of various types of Electrophoresis. (10)





- Q6 a) Write a short note on following : (5)
- i. Principle of DSC
 - ii. Principle of TGA
 - iii. DDTA
- b) Explain the principle of DTA? (5)
- c) Write a short note on principle and working of Potentiometry. (5)

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

