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Total No. of Pages : 01

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**M.Pharmacy(Pharmaceutical Quality Assurance) (2017 & Onwards)  
(Sem.-1)****MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES****Subject Code : MQA-101T****M.Code : 74699****Time : 3 Hrs.****Max. Marks: 75****INSTRUCTIONS TO CANDIDATES :**

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

1. Answer the following questions in brief :
  - A. Beer-Lambert's law 5
  - B. Factors affecting vibrational frequencies 5
  - C. Coupling constant 5
2.
  - A. Discuss principle, instrumentation and applications of flame emission spectroscopy. 8
  - B. Discuss briefly the principle of FT-NMR and <sup>13</sup>C-NMR 7
3.
  - A. Write about principle, instrumentation and pharmaceutical applications of differential scanning calorimetry (DSC). 8
  - B. Elaborate on SDS-PAGE gel electrophoresis technique. 7
4.
  - A. What is Bragg's law in X-ray crystallography? Discuss about different X-ray diffraction methods. 8
  - B. Discuss about different detectors used in gas chromatography. 7
5. Write short notes on following :
  - A. Isoelectric focusing 5
  - B. Factors influencing chemical shift 5
  - C. Explain derivative differential thermal analysis 5
6.
  - A. Discuss different types of mass analyzers used in mass spectroscopy. 8
  - B. Write about principle, working and applications of potentiometry. 7

**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.**

