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Total No. of Pages : 02

Total No. of Questions : 06

M.Pharmacy (Pharmacogonosy) (2017 & Onwards) (Sem.–1)

MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

Subject Code : MPG-101T

M.Code : 74669

Time : 3 Hrs. Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

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

1. a) Enumerate basic principle of mass spectroscopy. How would you recognize a molecular ion peak? 10

   b) Explain metastable ions, base peak and isotope peaks. 5

2. a) Explain Dispersive and Fourier transform IR spectrometers with suitable diagram. 7.5

   b) Write the applications of IR spectroscopy 7.5

3. Discuss the following :

   a) Principle of proton NMR spectroscopy and explain chemical shift. 8

   b) Pascal triangle 2

   c) Factors influencing chemical shift 5

4. a) Draw a neat diagram of HPLC and explain the principle involved and its working. 10

   b) Describe ion exchange chromatography with suitable examples. 5

5. Write notes on following (Any **THREE**) :

   a) Gel electrophoresis 5

   b) Paper electrophoresis 5

   c) X-ray diffraction methods and its application 5

   d) DTA and its application 5

6. a) Enlist the different ionization techniques in MS and describe electron impact mode 6

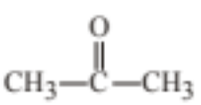
b) Briefly outline of ^{13}C NMR. 4

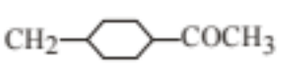
c) Discuss briefly paper chromatography. 3

d) Find out the number of proton environments in the following compounds? 2

$CH_3–CH_2–CH_2–COOH$

$CH_3–CH_2–O–CH_2–CH_3$





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.