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M.Pharmacy(Pharmacology) (2017 & Onwards) (Sem.–1)
MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES
Subject Code : MPL-101T
Paper ID : [74675]

Max. Marks : 75

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

1.
 - a. What is derivative spectroscopy? (5)
 - b. Discuss the influence of mesomeric and inductive effect on vibrational frequency in IR spectrum. (5)
 - c. Describe the advantages of fluorimetry over the absorption spectroscopy. (5)
2.
 - a. Comment on quantum number of NMR active nuclei. (5)
 - b. Compare ^1H NMR with ^{13}C NMR (5)
 - c. Use the N+1 rule to predict splitting pattern in following compounds: (5)
 - a) $\text{CH}_3\text{CH}_2\text{OH}$
 - b) $\text{CH}_3\text{CH}_2\text{Cl}$
3.
 - a. Describe the construction and working of MALDI/TOF mass spectrometer. (7.5)
 - b. Describe the fragmentation rule to interpret mass spectrums. (7.5)
4.
 - a. Give schematic diagram of an injector for packed column GC (5)
 - b. What is the principle of ultra-high performance liquid chromatography? (5)
 - c. Name various detecting reagents used in TLC. Give advantages of iodine vapours as a development reagent. (5)
5.
 - a. What is zone electrophoresis? (5)
 - b. Compare zone electrophoresis with paper electrophoresis. (5)
 - c. Give applications of X-ray diffraction methods. (5)
6.
 - a. What is hyper-DSC? Describe its advantages and disadvantages. (7.5)
 - b. Describe the factors affecting TG curves. (7.5)