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MANIPAL UNIVERSITY

FIRST YEAR M. PHARM. DEGREE EXAMINATION - JULY 2017
SUBJECT: MODERN PHARMACEUTICAL ANALYSIS (PQA 601T)
(SPECIALIZATION: PHARMACEUTICS/INDUSTRIAL PHARMACY/PHARM. QUALITY ASSURANCE/PHARM. BIOTECHNOLOGY)
(2014 REGULATIONS)
Monday, July 17, 2017 (10.00 - 13.00 Hrs.)

Marks: 100

Duration: 180 mins.

Answer ALL the questions:

- 1A) Explain the effect of solvent and crossed conjugation on absorption spectra with example. (5)
- 1B) Explain the Woodward-Fieser rules for Dienes. (5)
- 2A) Explain the instrumentation of Raman spectroscopy. (5)
- 2B) Why the vibrational frequency of C=O shifts from its normal value in IR spectrum? Explain. (5)
- 3A) What is the scope of 'decoupling methods' in ^{13}C NMR spectroscopy? Explain. (5)
- 3B) Explain the causes for deshielding of aldehyde protons in ^1H NMR spectroscopy. (5)
- 4A) Explain the gas phase ionization techniques in mass spectroscopy and their applications. (7)
- 4B) What are M+1 ion peak, M+2 ion peak and metastable ion? (3)
- 5A) Explain any four mechanisms responsible for separation in chromatography. (5)
- 5B) Explain the variables that affects the column efficiency in a chromatographic separation. (5)
- 6A) Explain the columns and stationary phases in GC. (5)
- 6B) Explain the working of Electron capture detector. (5)
- 7A) Explain the theory and instrumentation of HPLC. (5)
- 7B) Explain the theory, process and applications of Ion-exchange HPLC. (5)
- 8) Explain the principle and applications of micellar electrokinetic chromatography in brief. (10)

Write short notes:

- 9A) Detection techniques in HPTLC. (5)
- 9B) Applications of Hyphenated techniques. (5)

Write briefly on the following:

- 10A) Merits and demerits of phosphorimetry over fluorimetry. (5)

10B)

Principle and experimental requirements for ELISA.

(5)