

Exam Date & Time: 12-Dec-2022 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal Academy of Higher Education, Manipal MPharm Theory End-Semester Examinations.

Modern Pharmaceutical Analytical Techniques [PQA-MIP101T - S2]

Marks: 75

Duration: 180 mins.

SECTION - A

Answer all the questions.

Answer the following (10 marks x 5 = 50 marks)

- 1) a) Explain the principle in the absorbance ratio method for simultaneous estimation of two drugs in a formulation. (10)
b) Explain the interferences in flame emission spectroscopy in brief. (5+5 marks)
- 2) a) With the help of energy level diagram explain why fluorescence is an instantaneous processes when compare to phosphorescence. (10)
b) Why FTIR is superior than dispersive IR? (5+5 marks)
- 3) Explain theory and instrumentation of NMR spectroscopy.. (10)
- 4) a. Discuss in detail about instrumentation of mass Spectroscopy (7 M)
b. How ions are produced from chemical ionization technique? (3 M) (10)
- 5) a. Explain in detail about various elution techniques in chromatography (7 M)
b. Explain any three column efficiency parameters (3 M) (10)

SECTION - B

Answer all the questions.

Answer the following (5 marks x 5 = 25 marks)

- 6) Explain the theory of UPLC with respect to Van Deemter Equation (5)
- 7) Explain differential thermogram with the help of neat diagram (5)
- 8) Name the indicator and reference electrodes for acid base aqueous, acid base non-aqueous, redox, complexometric and precipitation potentiometric titrations. (5)
- 9) List the applications for capillary zone electrophoresis and Micellar electrokinetic chromatography. (5)
- 10) Explain the principle and applications of sandwich ELISA (5)

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