

7/2/2023

Total No. of printed pages = 2

MPH 101 T

Roll No. of candidate

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2023

M.Pharm. 1st Semester End-Term Examination

Pharmaceutics

MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

Full Marks – 75

Time – Three hours

The figures in the margin indicate full marks for the questions.

1. Answer all : (10 × 2 = 20)
 - (a) What is the function of sweep generator in NMR?
 - (b) Define Chromophore with suitable examples.
 - (c) What is coupling and coupling constant?
 - (d) Enlist some limitations of flame photometry.
 - (e) With example state the difference between emission and absorption spectroscopy.
 - (f) What is elution analysis?
 - (g) Why M+1 and M+2 peaks are seen in Mass Spectrometry?
 - (h) Define theoretical plates.
 - (i) Define and write the Van Demter equation.
 - (j) Define plate theory of chromatography.

2. Answer any seven : (7 × 5 = 35)
 - (a) Write the working of prism and grating monochromator.
 - (b) Write a note on the vibrations of IR Spectroscopy.
 - (c) Explain how solvents are selected for chromatography.
 - (d) Explain the working of Barrier Layer Cell.

[Turn over]

- (e) What is R_f value? Write some advantages and disadvantages of TLC. (1+4=5)
- (f) Explain the mechanism of ion exchange in ion exchange chromatography. Mention the factors affecting ion exchange. (2+3=5)
- (g) Derive the Bragg's equation.

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- (h) Write a note on RIA.
- (i) Write a note on chemical shift, coupling and coupling constant.

3. Answer any two : (2 × 10 = 20)
- (a) Explain the principle of Mass spectrometry. With proper diagram explain the instrumentation of Mass Spectrometer. (3+7=10)
 - (b) What is ELISA? Explain the different types of ELISA in details. Enlist some applications of ELISA. (1+6+3=10)
 - (c) Write the principle of NMR. Explain the instrumentation and working of an NMR spectrometer. (4+6=10)

The figures in the margin indicate full marks for the questions

(10 × 2 = 20)

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(7 × 5 = 35)

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