22/04/2021

Total No. of printed pages = 2

MPH 101 T

Roll No. of candidate | | | | | | | | | | |

2021

M.Pharm. 1st Semester (Regular) Examination

Pharmaceutics

MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

(New Regulation w.e.f. 2017-18)

Full Marks – 75 Time – Three hours

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

A. Answer *all* (10 × 2 = 20)

1. Calculate the λ_{max} for 1,4-dimethylcyclohex-1,3-diene.
2. Why peaks in IR graph are reversed?
3. With example state the difference between emission and absorption spectroscopy.
4. Why TMS is used as reference molecule in NMR?
5. Why M+ 1 and M+2 peaks are seen in Mass Spectrometry?
6. Define theoretical plates.
7. What is frontal analysis?
8. Define and mention the benefit of purging.
9. Define plate theory of chromatography.
10. What is displacement analysis?

B. Answer any *seven* (7 × 5 = 35)

11. Write the working of prism and grating monochromator.
12. Explain the working of a bolometer.
13. Write a schematic representation for the principle of Flame Photmetry.

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14. What is Electrophoresis? Write the factors affecting Electrophoretic mobility. (2 + 3 = 5)

15. What is R_f value? Write some advantages and disadvantages of TLC. (1 + 4 = 5)

16. Explain the mechanism of ion exchange in ion exchange chromatography. Mention the factors affecting ion exchange. (2 + 3 = 5)

17. Derive the Bragg's equation.

18. Write a note on RIA.

19. Write a note on chemical shift, coupling and coupling constant.

C. Answer any *two* (2 × 10 = 20)

20. Define Chromophore and Auxochrome with suitable examples. Explain the different electronic transitions of UV Visible spectroscopy. With diagram explain the working of a double beam UV-Visible spectrophotometer. (2 + 4 + 4 = 10)

21. What is ELISA? Explain the different types of ELISA in details. Enlist some applications of ELISA. (1 + 6 + 3 = 10)

22. Write the principle of NMR. Explain the instrumentation and working of an NMR spectrometer. (4 + 6 = 10)