Total No. of printed pages = 2

MPC 101 T

Roll No. of candidate ☐☐☐☐☐☐☐☐☐

2021

M.Pharm. 1st Semester (Regular) Examination

Pharmaceutical Chemistry

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. $(10 \times 2 = 20)$

1. Define Chromophore with suitable examples.

2. Why peaks in IR graph are reversed?

3. Why monochromators are used in flame emission spectroscopy?

4. Why TMS is used as reference molecule in NMR?

5. What is Chemical shift?

6. What is the function of sweep generator in NMR?

7. Define plate theory of chromatography.

8. What is elution analysis?

9. Define and write the Van Demter equation.

10. Write about successive elution technique of chromatography.

B.   Answer any SEVEN. $(7 \times 5 = 35)$

11. With a neat diagram write the working of Photomultiplier Tube.

12. Elaborate the interferences of Flame Photometry.

13. Write a note on the vibrations of IR Spectroscopy.

14. Explain the working of a bolometer.

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15. Explain how solvents are selected for chromatography.

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

17. Write a note on potentiometric titration.

18. Explain the process and applications of TGA.

19. Write a short note on Atomic Absorption Spectroscopy.

C. Answer any TWO. $(2 \times 10 = 20)$

20. Explain the principle of Mass spectrometry. With proper diagram explain the instrumentation of Mass Spectrometer. $(3 + 7 = 10)$

21. With Jablonski diagram explain the principle of Fluorescence and Phosphorescence. Mention the factors affecting fluorescence. $(4 + 6 = 10)$

22. Write the principle of HPLC. With neat diagram explain the different parts and working of HPLC. Write some applications of HPLC. $(3 + 5 + 2 = 10)$