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Total No. of printed pages = 2

MPL 101 T

Roll No. of candidate

2021

M.Pharm. 1st Semester (Regular) Examination

Pharmacology

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 Auxochrome with suitable examples.

2.   Explain how IR absorption frequency is related with bond length?

3.   Enlist some limitations of flame photometry.

4.   What is coupling and coupling constant?

5.   In what situations molecular ion peak and base peak are same in case of Mass Spectrometry?

6.   Define rate theory of chromatography.

7.   What is displacement analysis?

8.   Write about successive elution technique of chromatography.

9.   Why peaks in IR graph are reversed?

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

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

11. Elaborate the interferences of Flame photometry.

12. Explain about the electrodes used in potentiometry.

13. Write a note on Atomic Absorption Spectroscopy.

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14. Explain the working of Thermocouple in IR spectroscopy.

15. Explain the working of Barrier Layer Cell.

16. With figure explain the Jablonskis' theory for fluorescence and phosphorescence.

17. Write a note on DSC.

18. Explain the working of a time of flight type of Mass Spectrometer.

19. Explain the types of paper chromatography based on their elution process.

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

20. Explain the different vibrations and different types of sampling techniques of IR spectroscopy. $(5+5=10)$

21. Write about the different electronic transitions of UV Visible spectroscopy. With a neat diagram explain the different parts of a double beam UV Visible spectrophotometer. $(5+5=10)$

22. Write the principle of HPLC. With diagram explain the different parts and working of an HPLC instrument. $(3+7=10)$

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