M 163/015

Enrolment Number										

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M. Pharm (Pharmaceutics) Semester Examinations

MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

Course Code: MPH101T

Full Marks – 75 **Time – 03 hours**

The figure in the margin indicates full marks for the questions.

A. Answer all (50 words) **(10×2=20)**

1. Define gradient elution.
2. Mention the benefit of purging.
3. With example state the difference between emission and absorption spectroscopy.
4. TMS is used as reference molecule in NMR, explain why.
5. Explain the reason of M+1 and M+2 peaks in Mass Spectrometry.
6. Define theoretical plates.
7. Mention the effect of atmospheric air in the DTA curve of calcium oxalate.
8. Define plate theory of chromatography.
9. Using Woodward fieser rule calculate the λ_{max} for 1,4-dimethylcyclohex-1,3-diene.
10. Mention the logic of reversed peak in IR graph.

B. Answer any seven (100 words) **(7×5=35)**

1. Write a note on ELISA.
2. Explain the working of a bolometer.
3. Write a schematic representation for the principle of Flame Photmetry.
4. Write the factors affecting Electrophoretic mobility.
5. Define R_f value? Write some advantages and disadvantages of TLC. **(1+4)**
6. Write a note on different ionization techniques used in mass spectrometry.
7. Derive the Bragg's equation.
8. Write a note on RIA.
9. Write a note on chemical shift, coupling and coupling constant.

C. Answer any two (200 words) **(2×10=20)**

1. 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)**
2. Explain the theory of mass spectrometry. With proper illustration explain the working of a single deflection mass spectrometer. **(1+6+3)**
3. Write the principle of NMR. Explain the instrumentation and working of an NMR spectrometer. **(4+6)**