W 014/011

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Enrolment Number										

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Winter, 2024

M. Pharm 2nd Semester Examination

ADVANCED SPECTRAL ANALYSIS

Course Code: MPC201T

Full Marks – 75 **Time – 03 hours**

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

A. Answer all (30 words) **2×10=20**

1. Using Wodward-Fieser rule calculate the λmax of para-amino phenol.
2. Mention the IR range for C=O (Str) and O-H (Str).
3. Mention the advantages of 2D NMR over 1D NMR.
4. Explain about M+1 and M+2 peaks found in mass spectrometry.
5. Mention why TMS is taken as standard in NMR.
6. Enlist the basic difference between DSC and TGA.
7. Define Chromophore with suitable examples.
8. With example state the difference between emission and absorption spectroscopy.
9. Mention the isotopes generally used in radioimmunoassay.
10. Explain the difference between flash chromatography and HPLC.

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

1. Write a note on Woodward-Fieser rule.
2. Write a note on the vibrations of IR Spectroscopy.
3. Explain about NOSY and COSY with their application.
4. Explain about Mc. Lafferty rearrangement.
5. Write a note on HPTLC.
6. Draw the probable IR spectrum of acetyl salicylic acid with special emphasis on the functional group region.
7. Write a note on coupling in NMR.
8. Explain the principle of radioimmunoassay.
9. Taking one example, explain about any of the 2D NMR experiment.

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

1. Explain the principle, instrumentation and working of NMR.
2. Define immunoassay. Explain the different types of immunoassay techniques. Enlist some applications of ELISA.
3. Explain the working of a deflection type mass spectrometer.