

FACULTY OF PHARMACY

**M. Pharmacy (Pharmaceutical Chemistry) II-Semester (PCI) (Suppl.) Examination,
January 2020**

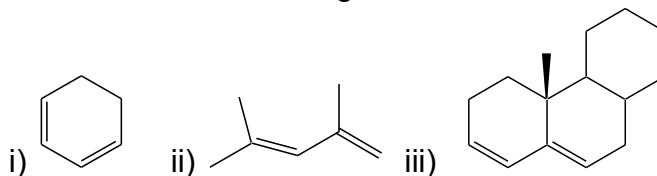
Subject: Advanced Spectral Analysis

Time: 3 Hrs

Max. Marks: 75

Note: Answer any five questions. All questions carry equal marks.

- 1 (a) Explain Woodward Fieser rules for α , β -carbonyl compounds and 1,3-butadienes and calculate the λ_{\max} for the following.



- (b) How do you interpret the following functional groups in IR

(i) -OH (ii) Ar-NH₂ (iii) -C=O (iv) -COOH (v) -CN (vi) -Cl ? (9+6)

- 2 Draw schematic 1-D & 2-D NMR spectra and explain the interpretation giving one example. (15)

- 3 (a) Discuss the fragmentation pattern of various functional groups. (8)
(b) Explain McLafferty rearrangement and isotopic peaks. (7)

- 4 Explain the Principle, instrumentation and applications of following : (8+7)
(a) HPLC (b) GC-MS

- 5 (a) Explain the Principle, instrumentation and applications of LCMS. (10+5)
(b) Write a note on super critical chromatography.

- 6 Explain the Principle instrumentation and applications of : (7+8)
(a) DSC
(b) TGA

- 7 (a) Explain the bio assay of insulin
(b) Write a note on Radioimmuno assay (8+7)

- 8 Draw and explain the proton NMR and Mass spectra of Benzyl alcohol and 4-hydroxy toluene (15)
