

SECTION B — (3 × 15 = 45 marks)

Answer any THREE questions.

6. Discuss the following with suitable examples
- Factors influencing the position and intensity of absorption bands.
 - Differentiate the intra and inter molecular hydrogen bonding using IR Spectra.
7. Write short notes on:
- NOE
 - Factors influencing proton chemical shifts
 - Proton decoupled and off resonance spectra.
8. (a) Explain the factors affecting cleavage patterns in mass spectrum.
(b) Describe the CRD and its applications.
(c) Give the fragmentation pattern of hydrocarbons.
9. Discuss the detailed structural determination of camphor and reserpine.
10. Write short note on:
- Methods of generation of free radicals.
 - Ulmann reaction.
 - Hunsdiecker reaction.

NOVEMBER/DECEMBER 2018

MCH31 — ORGANIC CHEMISTRY — III

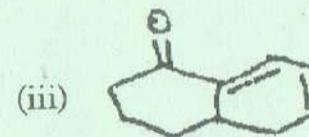
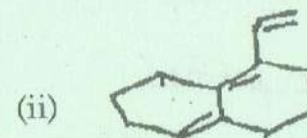
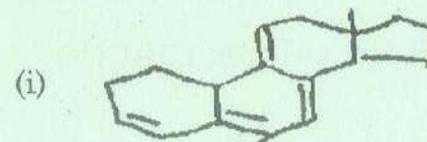
Time : Three hours

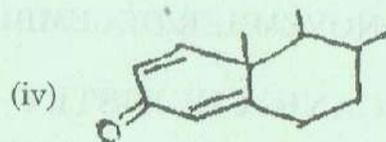
Maximum : 75 marks

SECTION A — (5 × 6 = 30 marks)

Answer ALL questions.

1. (a) Calculate the λ_{\max} for the following compounds using Woodward-Fieser rules.





Or

(b) Discuss the factors affecting vibrational frequencies in IR spectrum.

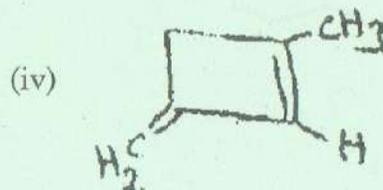
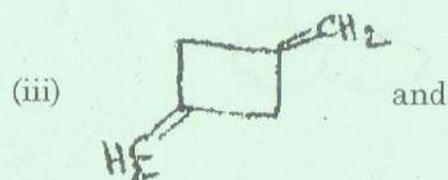
2. (a) Write a note on CW and FT NMR.

Or

(b) How do you differentiate the following compounds using ^1H NMR Spectra?

(i) $\text{CH}_3\text{CH}_2\text{OH}$ and CH_3CHO

(ii) $\text{CH}_3\text{CH}_2\text{CH}_2\text{Cl}$ and $\text{CH}_3\overset{\text{Cl}}{\underset{|}{\text{CH}}}-\text{CH}_3$



3. (a) Explain the FAB, SIMS measurement techniques in the mass spectroscopy.

Or

(b) Write note on the following:

(i) Mc Lafferty rearrangement

(ii) Octant rule

(iii) Cotton effect.

4. (a) Describe the structural determination of citral.

Or

(b) Discuss the synthesis of quinine.

5. (a) Write the method of detection of free radicals by ESR.

Or

(b) Explain the following reactions with mechanism

(i) Sandmeyer reaction

(ii) Pschorr reaction.

