

PARUL UNIVERSITY
FACULTY OF PHARMACY
M.Pharm. Summer 2017 - 18 Examination

Semester: 2**Subject Code: MPC201T****Subject Name: Advanced Spectral Analysis****Date: 14/05/2018****Time: 10:00AM TO 01:00PM****Total Marks: 75****Instructions:**

1. Figures to the right indicate maximum marks.
2. Make suitable assumptions wherever necessary.

Q.1 Essay Type Questions. (any 2 out of 3) (15 Marks Each) (30)

1. Write short note on LC-MS and GC-MS.
2. Explain mass fragmentation of carbonyl groups.
3. Elucidate the structure of compound using following detail.

IR(cm^{-1}): 2990, 2942, 2882, 2859, 1450, 1279, 1117MS Data(m/z) : M^+ 232 100% $(M+1)^+$ 233 194.2% $(M+2)^+$ 234 99.2%PMR (δ value): 3.2 TRI 4H

3.88 TRI 4H

Q.2 Short Essay Type Questions. (any 5 out of 6) (5 Marks Each) (25)

1. Write a note on RIA.
2. Explain chemical shift with example.
3. Compare SFC with GC and LC.
4. Explain working of DTA with well labeled diagram.
5. Explain ATR.
6. Explain effect of conjugation with example using Woodward Fischer rule.

Q.3 Short Answers. (2 Marks Each) (20)

1. What is tropyllium ion?
2. Differentiate flash chromatography and HPTLC.
3. What is the multiplicity of NMR signals of acetone?
4. How many signals are observed in NMR spectra of dichloro ethane?
5. What are the conditions for Mc-Lafferty rearrangement?
6. Explain principle of Raman Spectroscopy in brief.
7. What is the difference between λ_{max} of compounds with and without exocyclic double bond?
8. Is λ_{max} of 2, 3-Dimethyl-1, 3-butadiene and 1, 3-Pentadiene same?
9. Differentiate PMR and ^{13}C NMR spectra in brief.
10. 1-Acetylcyclohexene's λ_{max} is different in methanol, ethanol and water: Comment.