

B. Pharm. Second Year Second Sem. Examination 2019
Pharm. Chem. -VII (Adv. Org.) Time: 3 Hours Full Marks: 100

Answer any five questions taking at least two from each group

Group 'A'

1. a) Write a note on Circular dichroism.
- b) What is Bathochromic shift. Explain with example.
- c) What is a stretching frequency? What determines stretching frequency in IR?
- d) Write the differences between Fluorescence and Phosphorescence.

4 X 05 = 20

2. Write a note on Cause of UV-visible absorption and different types of electronic transitions in UV. Write the application of UV-visible spectroscopy.

10 + 10 = 20

3. a) Define isomers with their classification and example. What do you mean by diastereomer?

03 + 02 = 05

- b) Discuss the importance of stereochemistry in the biological activity of drug molecules.

05

- c) An organic compound ($C_4H_8O_2$) having MW of 88.11 shows specific IR stretching frequencies at 2981, 1752 and 1250 and 1055 cm^{-1} . Its 1H -NMR spectrum shows signals in three distinct regions at δ 1.2 (triplet), δ 2.0 (singlet) and δ 3.9 (quartet). It shows a molecular ion peak at m/z 88 and a base peak at m/z 43. What is the possible structure of this compound? Explain the reason in details.

10

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Group 'B'

4. a) What is the definition of the Beer and Lambert law? 06
- b) The molar absorbance of a drug solution is 1.2×10^4 at 275 nm. Calculate the concentration of the drug in solution which has a % transmittance of 40 at 275 nm in a cell of path-length of 1 cm. 04
- c) Write down the ranges of IR absorption. What is Fermi resonance? Calculate the IR stretching frequency of C-H bonds. 02 + 02 + 06 = 10
5. a) Write a detail note on Aldol addition and condensation following acid and basic condition. 10
- b) Write a note on Arndt eistert. 05
- c) Write a note on Wurtz-Fittig reaction. 05
6. a) Write a short note on Beckmann rearrangement with mechanisms. 10
- b) Explain Cannizzaro reaction. 05
- c) Write a note on Birch reduction. 05