

Rajiv Gandhi University of Health Sciences, Karnataka  
I Year Pharm. D Degree Examination – June 2014

Time: Three Hours

Max. Marks: 70 Marks

PHARMACEUTICAL ORGANIC CHEMISTRY

**Q.P. CODE: 2877**

Your answers should be specific to the questions asked  
Draw neat labeled diagrams wherever necessary. Answer all questions

**LONG ESSAYS (Answer any Two)**

**2 x 10 = 20 Marks**

1. Discuss the reaction and kinetics in nucleophilic aliphatic substitution mechanism. Write a note on stereochemistry involved and the role of solvents.
2. Discuss the effect of substituent groups on arenes. Write in detail on the orientation and relative reactivity of substituent group on the aromatic ring.
3. Discuss in detail on the stability of cycloalkanes. Write the importance of Axial-axial interaction.

**SHORT ESSAYS (Answer any Six)**

**6 x 5 = 30 Marks**

4. Discuss on the different theories of acids and bases with merits and demerits.
5. Write a note on Cannizzaro and crossed Cannizzaro reaction with mechanism.
6. Write the theory and mechanism involved in benzoin condensation and Wittig reaction
7. Write the difference in the mechanisms of Markovnikov's and Anti Markovnikov's Rule
8. Define free radicals with examples. Write any one reaction involving free-radical mechanism
9. What is Kekulé's structure of benzene and write their resonance structure of Benzene.
10. Define solubility? Write on ionic and non-ionic solutes
11. Write the structure, assay and uses of 1. Vanillin 2. Citric acid.

**SHORT ANSWERS**

**10 x 2 = 20 Marks**

12. a) Give the structure for 5-Bromo-4-methyl-hex-3-en-2-one.  
b) Give the IUPAC name for HO-CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-COOH
13. Nomenclature of Nitriles
14. Diel's Alder reaction
15. Structure and uses of Paraldehyde
16. Acidity of acids
17. What are Carbenes? Write example
18. Write the structure of Phenol and benzyl alcohol.
19. Hydrogen bonding
20. Define heat of Hydrogenation
21. Bond polarity and molecular polarity.

\*\*\*\*\*