

**Rajiv Gandhi University of Health Sciences, Karnataka**  
**Third Semester B. Pharm Degree Examination – 28-Oct-2025**

**Time: Three Hours**

**Max. Marks: 75 Marks**

**Pharmaceutical Organic Chemistry - II**  
**Q.P. CODE: 5009**

Your answers should be specific to the questions asked  
Draw neat labeled diagrams wherever necessary  
All the questions are compulsory

**LONG ESSAYS**

**2 x 10 = 20 Marks**

1. Give the general mechanism of electrophilic aromatic substitution reaction with suitable example. Discuss the orientation effect of hydroxyl group in phenol  
**OR**  
What are phenols? Explain the reactions of phenols. Discuss the effect of substituents on acidity of phenols
2. Explain drying, semidrying and non-drying oils with examples. Give the principle involved in the determination of saponification value.

**SHORT ESSAYS**

**7 x 5 = 35 Marks**

3. Explain the aromaticity, orbital picture and resonance structure of benzene  
**OR**  
Define aromatic amines? Give any four chemical reactions of aromatic amine
4. Explain the iodine value and RM value of fats and oils and their significance  
**OR**  
Outline the synthesis of Anthracene by Haworth method
5. Discuss Coulson and Moffitt's modifications of Bayer's strain theory of cycloalkanes.
6. Define and classify polynuclear hydrocarbons. Give any two synthesis of naphthalene.
7. Explain the reaction and mechanism of nitration of benzene.
8. Describe the method to determine acid value of oils and fats and give its significance.
9. Give any four chemical reactions of cyclobutane.

**SHORT ANSWERS**

**10 x 2 = 20 Marks**

10. Write the structure and uses of DDT and BHC.
11. Give any two chemical reactions of benzoic acid.
12. Define fats and oils with examples.
13. Write the structure and uses of diphenylmethane.
14. Define angle strain and tetrahedral angle.
15. Define saturated and unsaturated fatty acids with examples.
16. Give the structure and uses of m-cresol and resorcinol.
17. Why oils are liquid and fats are solids at room temperature.
18. What is Sacke-mohr's theory?
19. Define deactivating group? Give examples.

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