Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Pharm Degree Examination – 23-Nov-2022

Time: Three Hours **Max. Marks: 70 Marks**

PHARMACEUTICAL ORGANIC CHEMISTRY – I (RS3)

Q.P. CODE: 2604

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Discuss the nucleophilic aliphatic substitution reactions emphasizing the mechanism and orientation

2. Explain with examples and mechanism :
   i) Perkin's reaction ii) Reimer Tiemann reaction iii) Cannizzaro's reaction

3. Explain with examples and mechanisms i) Free radical substitution to alkanes
   i) Free radical addition to alkenes iii) Electrophilic addition to alkenes

SHORT ESSAYS (Answer any Six) **6 x 5 = 30 Marks**

4. Give the kinetics and mechanism of E1 and E2 reactions
5. Explain Lowry-Bronsted theory of acids and bases
6. Explain the stability of conjugated dienes
7. Give the mechanism involved in the following reactions i) Claisen condensation ii) Hofmann's reaction
8. Explain the theory of orientation by amino group and chlorine in electrophilic aromatic substitution
9. Discuss the mechanism of dehydration of alcohols and comment on the orientation
10. What are alkenes? Give the rules for the nomenclature of alkenes with examples
11. Discuss Williamson's synthesis, its applications and limitations

SHORT ANSWERS **10 x 2 = 20 Marks**

12. How do substituents influence the acidic strength of phenols
13. How do you synthesis m-bromonitrobenzene from benzene?
14. Give IUPAC names for $1) CH_3 - CH_2 - CH_2 - COOH$

$$2) HC \equiv C - \underset{\displaystyle CH_3}{\underset{|}{CH}} - CH = CH_2$$

15. Distinguish between protic and aprotic solvents give examples
16. How do you prepare diazonium salts? Give the reaction involved
17. What is functional and position isomerism? Give examples.
18. Give examples for Friedel craft's alkylation and acylation
19. Define carbonium ion, classify with examples.
20. Write examples of a cycloaddition reaction
21. Write a note on Huckel's rule of aromaticity

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