

associated with the synthesis of higher membered cycloalkanes? 4+3+3=10

3. Describe the significance and principle involved in their determination of saponification value and iodine value. Give necessary reactions. 5+5=10

III. Short answers (Answer seven out of nine questions) 5x7=35

1. Write down the Haworth synthesis and two reactions of naphthalene. 3+2=5
2. What is the significance and principle of Reichert Meissl value? 2+3=5
3. Write five reactions of given by fatty acids. 5
4. Write a note on Friedel Crafts alkylation reaction and mention its limitations. 3+2=5
5. Discuss the effect of substituents on reactivity and orientation of mono substituted benzene compounds towards electrophilic substitution reaction.. 5
6. Write a note on nitrosation reactions of arylamines and mention the end product of reaction between a secondary aryl amine and a carbonyl compound. 4+1=5
7. What are the various synthetic uses of aryl diazonium salts. Give reactions. 5
8. Write down the mechanism of Cumene-Phenol process. 5
9. Give the structure and uses of cresols and diphenylmethane. 2.5+2.5=5

2023/SEM/ODD/BP-301T/002

UG Odd Semester (CBCS) Examination, March 2023

PHARMACEUTICAL SCIENCES

(3rd Semester)

Course No: BP 301T

(Pharmaceutical Organic Chemistry II-Theory)

Full Marks: 75

Time: 3 Hours

The figures in the margin indicate full marks for the questions

I(A). Multiple choice questions 1x10=10

1. Phenol is converted to salicylaldehyde when treated with chloroform and aq. KOH, the reaction is known as
 - (a) Friedel Crafts reaction
 - (b) Rosenmund's reaction
 - (c) Schiemann reaction
 - (d) Reimer-Tiemann reaction
2. Iodobenzene undergoes the electrophilic aromatic substitution reaction to give
 - (a) Only para substituted product
 - (b) Only ortho substituted product
 - (c) Both para and ortho substituted product
 - (d) Meta substituted product
3. In naturally occurring unsaturated fatty acids, the conformation of the double bonds are
 - (a) Trans conformation
 - (b) Cis conformation

(Turn Over)

- (c) Mixture of cis and trans conformation
 (d) Alternate cis and trans conformation
4. Which of the following is not an omega 3 fatty acid?
 (a) Eicosapentaenoic acid
 (b) Docosahexaenoic acid
 (c) alpha-Linolenic acid
 (d) Linoleic acid
5. The C-C-C bond angle of a cyclopentane ring is
 (a) 128°
 (b) 108°
 (c) 120°
 (d) 134°
6. Reaction of cycloalkanes with halogen in the presence of light yields
 (a) Addition products
 (b) Substituted Products
 (c) Elimination Products
 (d) None of the above
7. Naphthalene when treated with chromium trioxide gives
 (a) Naphthoquinone
 (b) Tetralone
 (c) Tetraline
 (d) Decalin
8. The product formed predominantly in the reaction of toluene with chlorine in the presence of FeCl_3 is
 (a) m-chlorotoluene
 (b) o- and p-chlorotoluene
 (c) Benzoyl chloride
 (d) Benzyl chloride
9. Phenol is less acidic than

- (a) p-methoxyphenol
 (b) Acetic acid
 (c) p-aminophenol
 (d) Ethanol
10. Choose the incorrect statement with respect to Sachse-Mohr theory
 (a) Larger rings get twisted in different planes
 (b) Cyclohexane exist in boat and chair form
 (c) The boat and chair form does not undergoes inter-conversions
 (d) All are correct

I(B). Objective type(Answer the following in brief)

2x5=10

1. What do you mean by antiaromatic compounds. Give an example
2. Give the mechanism of nitration reaction of aromatic compounds
3. How an aromatic acid is prepared from a Grignard's reagent?
4. Write down the general mechanism of alkali hydrolysis of fatty acid ester.
5. What do you mean by banana bond theory?

II. Long answers (Answer two out of three questions)

10x2=20

1. Discuss the analytical, synthetic and other evidences in the derivation of structure of benzene. Write a brief note on the Orbital and resonance structure of benzene. 7+3=10
2. Write down the synthesis and reactions of cyclopropane and cyclobutane. Discuss Sachse Mohr's theory and how to overcome the problem