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Pharmaceutical Technology
Brainware University
Barasat, Kolkata - 700125

BRAINWARE UNIVERSITY

Term End Examination 2024-2025

Programme – B.Pharm-2020/B.Pharm-2021/B.Pharm-2022/B.Pharm-2023

Course Name – Pharmaceutical Organic Chemistry II

Course Code - BP301T

(Semester III)

Full Marks : 75

Time : 3:0 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 20=20

1. Choose the correct alternative from the following :

- (i) Identify the correct option; Benzene reacts with propane in the presence of H₂SO₄ catalyst to give _____.
 - a) n-Propylbenzene
 - b) Benzophenone
 - c) Cumene
 - d) Nothing Happens
- (ii) Identify the correct option, Benzene undergoes Friedel-Crafts reaction with isopropyl alcohol in presence of H₂SO₄ catalyst to give _____.
 - a) n-Propylbenzene
 - b) Benzophenone
 - c) Isopropylbenzene
 - d) Nothing happens
- (iii) Select the correct option. Benzene reacts with acetic anhydride in the presence of anhydrous aluminium chloride to form _____.
 - a) Acetophenone
 - b) Benzophenone
 - c) Phenylacetic acid
 - d) Phenyl acetate
- (iv) Select the correct option; Benzene reacts with H₂ at 1500C at 30 atm in the presence of Ni catalyst to give _____.
 - a) Cyclohexane
 - b) Cyclohexene
 - c) n-hexane
 - d) No reaction occurs
- (v) What is the attacking electrophile for chlorination of benzene?
 - a) Cl:-
 - b) Cl+
 - c) Cl₂
 - d) HCl
- (vi) Select the electrophile responsible for nitration of benzene is _____.
 - a) NO₂-
 - b) NO
 - c) NO₂+
 - d) HNO₂
- (vii) Which of the following agent is used in order to make benzene react with chloride to give acetophenone?
 - a) Ultraviolet light
 - b) AlCl₃ catalyst
 - c) Platinum catalyst
 - d) Al₂O₃ catalyst

- (viii) Select the reason behind the benzene undergoes substitution reaction more easily than addition reaction because
- It has a cyclic structure.
 - It has three double bond.
 - It has six hydrogen atom.
 - There is delocalization of electrons.
- (ix) Identify the product of this reaction; Cresols on distillation with zinc.
- o-Xylene
 - benzene
 - o-plus p-Xylene
 - Toluene
- (x) What is the use of saccharin?
- Sweetening agent
 - Bitter tonic
 - Flavoring agent
 - Colouring agent
- (xi) Select the correct formula of benzene.
- $C_{10}H_{10}$
 - C_4H_4
 - C_6H_6
 - C_6H_{12}
- (xii) Select the correct product after the reaction between bromine with benzene.
- Bromo benzene
 - Iso benzene
 - Meta benzene
 - None of these
- (xiii) Identify the correct electrons state for the C-C bond.
- s-s electrons
 - s-sp² electrons
 - sp-sp electrons
 - sp²-sp² electrons
- (xiv) Select the correct substituent for an ortho and para director in ring deactivating of the phenyl group.
- NH₂
 - Cl
 - OCH₃
 - OH
- (xv) Choose which amine is not soluble in water-
- Methylamine
 - Trimethylamine
 - Dimethylamine
 - All are soluble in water
- (xvi) Choose which of the following will have highest boiling point-
- Methylamine
 - Trimethylamine
 - Dimethylamine
 - Ethylamine
- (xvii) Choose which of the following is most basic-
- Methylamine
 - Trimethylamine
 - Dimethylamine
 - Ammonia
- (xviii) Choose the correct option. Reduction of an imine will give an _____
- Acid
 - Amide
 - Amine
 - Alcohol
- (xix) Choose the correct option. Aliphatic primary amine react with cold nitrous acid to form _____
- Alcohol
 - Diazonium salts
 - Nitriles
 - Nitroalkanes
- (xx) Choose the correct option. 2° amine is known as
- N-methyl amine
 - N,N-Di methyl amine
 - N,N-tri methyl amine
 - None of these

Group-B

(Short Answer Type Questions)

5 x 7=35

- Describe the structure, preparation and uses of Chloramine. (5)
- Discuss in brief about the Friedel Craft's acylation reaction along with mechanism. (5)
- Why the -CF₃ group is meta directing? (5)
- Discuss in brief about the nitration of benzene along with it's mechanism. (5)
- Write the synthesize the process Cyclohexane from benzene. (5)

7. Explain any two chain Opening reactions of Cycloalkane. (5)

OR

Explain the saponification and hydrolysis of fats. (5)

8. Explain any two analyzing constant of Fats & oils. (5)

OR

Analyze the Coulson Mofits theory to determine the stability of Cyclo alkane. (5)

Group-C

(Long Answer Type Questions)

10 x 2=20

9. Explain about the various reactions of Anthracene. (10)

10. Explain the significance of theory of Coulson and Moffitt's modification, Sachse Mohr's theory (Theory of strainless rings) (10)

OR

Explain about the introduction, properties, sources, health effects of Polynuclear hydrocarbons. (10)

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