



BRAINWARE UNIVERSITY

Term End Examination 2022

Programme – B.Pharm-2018/B.Pharm-2020/B.Pharm-2021

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) Benzene reacts with acetic anhydride in the presence of anhydrous aluminium chloride to form _____
- a) Acetophenone
b) Benzophenone
c) Phenylacetic acid
d) Phenyl acetate
- (ii) A compound of formula C_6H_{12} does not react most readily with concentrated H_2SO_4
- a) Alkanes
b) Alkenes
c) Alkynes
d) Cycloalkanes
- (iii) Benzene reacts with H_2 at $1500C$ at $30\ atm$ in the presence of Ni catalyst to give _____
- a) Cyclohexane
b) Cyclohexene
c) n-hexane
d) No reaction occurs
- (iv) Cyclopropane reacts with hydrogen in presence of nickel catalyst at $800C$ to give
- a) Propane
b) Propene
c) Propylene
d) all of them
- (v) Cyclobutane has the structure of
- a) pentagon
b) square
c) triangle
d) hexagon
- (vi) Which of the following is important to increase boiling point of cycloalkanes
- a) Molecular weight
b) Temperature
c) Pressure
d) None of these
- (vii) Unlike _____, the carbon carbon bonds in naphthalene are not of the same length
- a) Pyridine
b) Ethylene
c) Benzene
d) Alkane
- (viii) Bond angle of cyclohexane is
- a) $61\ Degree$
b) $100.5\ Degree$

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- c) 24.75 Degree d) 120.0 Degree
- (ix) Anthracene undergoes oxidation with O₂/V₂O₅ at 5000 C to give
a) Benzoic acid b) Anthraquinone
c) Phthalic acid d) Benzophenone
- (x) Cyclopropane has the structure of
a) pentagon b) square
c) triangle d) hexagon
- (xi) All carbon atoms in naphthalene are
a) sp hybridized b) sp² hybridized
c) sp³ hybridized d) None of these
- (xii) Melting point of cyclohexane is
a) 7.60C b) 6.60C
c) 5.50C d) 10.60C
- (xiii) Naphthalene had molecular formula _____
a) C₆H₆ b) C₈H₆
c) C₁₀H₆ d) C₁₀H₈
- (xiv) Which of the following compound react most readily with concentrated H₂SO₄
a) Cyclopropane b) Cyclohexane
c) Cyclobutane d) Cyclopentane
- (xv) Aminonaphthalene which on Oxidation gave _____
a) Phthalic acid b) Phenol
c) Acetic acid d) Cresol
- (xvi) Derivative of naphthol is
a) 1-naphthol b) 2-naphthol
c) Both 1-naphthol and 2-naphthol d) None of these
- (xvii) Toluene reacts with fuming sulphuric acid to form a mixture of _____
a) Ortho and Para-toluenesulphonic acid b) Ortho and Para-Xylene
c) Ortho and Para-Methylacetophenone d) ortho and para-chlorotoluene
- (xviii) Ozonolysis of benzene gives _____
a) Formic acid b) Glyoxal
c) Formaldehyde d) Glycine
- (xix) Benzene undergoes Friedel-Crafts reaction with isopropyl alcohol in the presence of H₂SO₄ catalyst to give _____
a) n-Propylbenzene b) Benzophenone
c) Isopropylbenzene d) Nothing happens
- (xx) Benzene reacts with benzoyl chloride in the presence of anhydrous aluminium chloride to form _____
a) Benzyl chloride b) Benzaldehyde
c) Benzal chloride d) Benzophenone

Group-B

(Short Answer Type Questions)

5 x 7=35

- Define/Describe identification test of fats and oils. (5)
- Illustrate the various methods for the preparation of phenol (5)
- Report What happens when naphthalene is treated with concentrated sulphuric acid at 1650 C? (5)
- Report What happens when naphthalene is warmed with concentrated nitric acid in the presence of sulphuric acid? (5)
- Define Physical properties of Cycloalkanes. Define Dieckmann Reaction (5)

7. Report a short note on (any two) a) carbal amine reaction b) Schiff's base c) Oxidation (5)
8. Explain any two chain Opening reactions of Cycloalkane. (5)

OR

Explain the basicity of aromatic amine with example. (5)

Group-C

(Long Answer Type Questions)

10 x 2=20

9. Report the product – a) Benzoic acid treated with methyl iodide in presence of aluminum chloride b) Benzoic acid treated with thionil chloride c) Benzoic acid treated with phosphorus pentoxide d) Benzoic acid treated with thionil chloride and ammonia (10)

OR

Report the method of preparation and reaction of various carboxylic acid derivatives. a) Amides b) Anhydride c) Ester d) Acetyl chloride (10)

10. Discuss a) Is benzene saturated or unsaturated? Explain properly. a) Comment on the bond character, bond strength and bond length of benzene. (10)

OR

Discuss how will you synthesize various phenol derivatives- (any four) a) Paranitro phenol & orthonitro phenol b) Salicylic acid c) Cresol d) Resorcinol e) Catechol f) d- Catechol (10)

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Pharmaceutical Technology
Bharatiya University
Varanasi, India 221005