



BRAINWARE UNIVERSITY

Term End Examination 2019 – 20

Programme – Bachelor of Pharmaceutical Technology

Course Name: Pharmaceutical Organic Chemistry II

Course Code – BP301T

(Semester – 3)

Time allotted: 3 Hours

Full Marks: 75

[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)

20 x 1 = 20

1. Answer all the questions
 - (i) General formula of cycloalkane is

a. C_nH_{2n}	b. C_nH_{2n+1}
c. C_nH_{n+1}	d. C_nH_n
 - (ii) Melting point of cyclohexane is

a. $7.6^\circ C$	b. $6.6^\circ C$
c. $5.5^\circ C$	d. $10.6^\circ C$
 - (iii) The most stable conformation of cyclohexane is the

a. Chair form	b. Haworth form
c. Newman form	d. Boat form
 - (iv) Cyclopropane reacts with hydrogen in presence of nickel catalyst at $80^\circ C$ to give

a. Propane	b. Propene
c. Propylene	d. all of them
 - (v) All carbon atoms in naphthalene are

a. sp hybridized	b. sp^2 hybridized
c. sp^3 hybridized	d. None of these
 - (vi) Anthracene is a polycyclic aromatic hydrocarbon composed of three fused _____ rings

a. Benzene	b. Ethylene
c. Alkane	d. Pyridine

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- (vii) Para amino benzoic acid have
- Vitamin Activity
 - Vinegar
 - Aspirin
 - Goat acid
- (viii) Vinegar contains
- Acetic acid
 - Lactic acid
 - Tartaric acid
 - Formic acid
- (ix) Which one is used as a water disinfectant
- BHC
 - Chloramine
 - Saccharine
 - Sodium Benzoate
- (x) Cholesterol is a
- Fatty acid
 - Phospholipid
 - Steroid
 - Glycolipid
- (xi) An Example of Bile acid is
- Cholic acid
 - Phospholipid
 - Cholesterol
 - Lenoleic acid
- (xii) Iodine value of coconut oil
- 10
 - 08
 - 15
 - 05
- (xiii) Wool fat is the
- Ester of cholesterol with other alcohol
 - Ester of cholesterol with other fatty acid
 - Both of them
 - None of them
- (xiv) Phenol is used
- In alcoholic beverages
 - an anesthetic
 - in antiseptics
 - as moth repellent
- (xv) Anisole is formed when phenol is treated with
- $\text{CH}_3\text{I}/\text{NaOH}$
 - $\text{CH}_3\text{CH}_2\text{I}/\text{NaOH}$
 - $\text{CHCl}_3/\text{NaOH}$
 - Acetic Anhydride
- (xvi) The hybridization of nitrogen in an amine is
- sp
 - sp^3
 - sp^2
 - sp^4
- (xvii) Reduction of an imine will give an
- Acid
 - Amide
 - Amine
 - Alcohol
- (xviii) Methyl amine reacts with nitrous acid to form
- CH_3CH_3
 - CH_3OH
 - CH_3NO_2
 - $\text{CH}_3\text{CH}_2\text{OH}$

- (xix) Oxidation of toluene with chromyl chloride gives benzaldehyde. This reaction is known as
- | | |
|---------------------|-------------------------|
| a. Perkin reaction | b. benzoin condensation |
| c. Etard's reaction | d. Ozonolysis |
- (xx) Characteristic reactions of aromatic hydrocarbon are initiated by
- | | |
|------------------|------------------------|
| a. Electrophiles | b. Nucleophiles |
| c. Free radicals | d. Uncharged molecules |

Group – B

(Short Answer Type Questions)

7 x 5 = 35

Answer any *seven* from the following

- | | | |
|-----|--|---------|
| 2. | Write Baeyer Strain Theory. | 5 |
| 3. | (a) Write Physical properties of Cycloalkanes. | 2+3 |
| | (b) Write a short note on Dieckmann Reaction. | |
| 4. | Write a short note on : | 2.5+2.5 |
| | (a) Oxidation reaction of cyclohexane | |
| | (b) Simmons – Smith Reaction | |
| 5. | What is rancidity of lipid? | 5 |
| 6. | Discuss which is more acidic and why- | 5 |
| | a) Phenol b) Alcohol c) Carboxylic acid | |
| 7. | What is the basic difference between carboxyl group and carbonyl group | 5 |
| 8. | Write down the structure of primary, secondary and tertiary aromatic amine. | 5 |
| 9. | Write a short note on (any two) | 2.5+2.5 |
| | (a) Carbyl amine reaction | |
| | (b) Schiff's base | |
| | (c) Oxidation | |
| 10. | (a) What happens when anthracene undergoes oxidation with sodium dichromate and sulphuric acid? | 2.5 |
| | (b) What happens when phenanthrene undergoes nitration with concentrated nitric acid and sulphuric acid? | 2.5 |

Group - C

(Long Answer Type Questions)

2 x 10 = 20

Answer any two from the following

11. (a) Is benzene saturated or unsaturated? Explain properly. 4
(b) Comment on the bond character; bond strength and bond length of benzene. 6
12. (a) Discuss the reactivity of benzene. 5
(b) Write about the various electrophilic aromatic substitution reaction predominantly undergone by benzene with the reaction mechanism involve in each of them. 5
13. (a) How will you Synthesis of naphthalene by Haworth Synthesis method. 4
(b) How will you synthesize 1-naphthalenesulfonic acid & 2-naphthalenesulfonic acid from naphthalene? 2
(c) How will you synthesize Anthracene from benzyl chloride? 2
(d) What happen when Phenanthrene reacts with chlorine in carbon tetra chloride at room temperature? 2
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Pharm. Science Technology
Bharati Vastu University
Bhopal, India 700125