



# BRAINWARE UNIVERSITY

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Brainware University  
B-318, 1st Floor, Sector 100125

## Term End Examination 2023

Programme – B.Pharm-2019/B.Pharm-2020/B.Pharm-2021/B.Pharm-2022

Course Name – Pharmaceutical Organic Chemistry I/Pharmaceutical Organic

Chemistry I – Theory

Course Code - BP202T

( Semester II )

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) What is the full form of IUPAC System?
- |  |  |
|--|--|
| a) International Union of Pure and Applied Chemistry | b) b.International Union of Pure and Applied Chemistry |
| c) International Union of Pure and Applied Chemistry | d) International Union of Pure and Applied Chemistry   |
- (ii) In which of the following reactions new carbon-carbon bond is not formed
- |                        |                            |
|------------------------|----------------------------|
| a) Cannizzaro reaction | b) Wurth reaction          |
| c) Aldol condensation  | d) Friedel-Crafts reaction |
- (iii) Which of the following statements concerning the oxidation of aldehydes and ketones is correct?
- |   |  |
|---|--|
| a) Aldehydes readily undergo oxidation and ketones are resistant to oxidation | b) Ketones readily undergo oxidation and aldehydes are resistant to oxidation. |
| c) Both aldehydes and ketones readily undergo oxidation                       | d) Both aldehydes and ketones are resistant to oxidation                       |
- (iv) The process in which the carbon atoms combine with each other to form long chains and different sized rings is known as \_\_\_\_\_.
- |               |               |
|---------------|---------------|
| a) Catenation | b) atenation  |
| c) atenation  | d) Cotenation |
- (v) Lindlar's catalyst is
- |                                    |                                      |
|------------------------------------|--------------------------------------|
| a) LiAlH                           | b) Pd/BaSO <sub>4</sub> in quinoline |
| c) NH <sub>2</sub> NH <sub>2</sub> | d) HCl/ZnCl <sub>2</sub>             |

- (vi) Liquefied petroleum gas is mainly composed of :
- a) Methane and ethane  
b) Ethane and propane  
c) Propane and butane  
d) Butane and hexane
- (vii) An alkane with 6 carbon atoms will have how many hydrogen atoms?
- a) 14  
b) 11  
c) 13  
d) 12
- (viii) The \_\_\_\_\_, the double bond undergoes complete cleavage converting the alkene molecule into smaller fragments.
- a) cleavage reaction  
b) Alkylation  
c) Acylation  
d) cleavage reaction
- (ix) The disappearance of the purple color of  $\text{KMnO}_4$  in its reaction with alkene is known as
- a) Markonikov test  
b) Grignard test  
c) Baeyer test  
d) Wurtz test
- (x) Which of the following alkanes will have the highest boiling point
- a) n-Octane  
b) Isopentane  
c) n-Butane  
d) Neopentane
- (xi) The combustion of pentane produces :
- a) Pentene  
b)  $\text{HCl} + \text{H}_2\text{O}$   
c) Pentyne  
d)  $\text{CO}_2 + \text{H}_2\text{O}$
- (xii) Which of the following halide can give best  $\text{S}_\text{N}2$  reaction?
- a) Primary alkyl halide  
b) Tertiary alkyl halide  
c) Secondary alkyl halide  
d) All can give  $\text{S}_\text{N}2$  reaction at same rate
- (xiii) In primary alkyl halides, carbon attached to the halogen atom is further attached to how many carbon atoms?
- a) one  
b) Two  
c) Three  
d) Four
- (xiv) 2 methylpropan-2-ol is an example of
- a) primary alcohol  
b) secondary alcohol  
c) tertiary alcohol  
d) quaternary alcohol
- (xv) When chloroform is heated with aqueous  $\text{NaOH}$ , it gives
- a) Formic acid  
b) Sodium formate  
c) Acetic acid  
d) Sodium acetate
- (xvi) Which of the following gives positive Iodoform test
- a) 1-Propanol  
b) 2-Propanol  
c) 3-Propanol  
d) None of these
- (xvii) Which one gives 1st position in priority table?
- a) Aldehyde  
b) Ketone  
c) Nitro  
d) Carboxylic acid
- (xviii) The compound which have same molecular formula but different structural formula are called
- a) Optical isomer  
b) Geometrical isomer  
c) Position isomer  
d) Structural isomer
- (xix) The reduction of ketone
- a) always gives a primary alcohol  
b) always gives a secondary alcohol  
c) always gives a carboxylic alcohol  
d) always gives a ketal
- (xx) Which of the following is a  $2^\circ$  alcohol?
- a) 1-Propanol  
b) 2-Propanol  
c) Cyclohexanol  
d) 2-methyl-2-butanol

**Group-B**  
(Short Answer Type Questions)

5 x 7=35

2. Describe Markonvinkov rule (5)
3. Compare between Alkyl Halide, Alkane and distinguish ethyl chloride, vinyl chloride (5)
4. Differentiate between Aldehyde and Ketone ; Primary, secondary, Tertiary Alcohol and describe functional group with examples (5)
5. Describe Diels-Alder reaction and ozonolysis (5)
6. Define carbonyl compounds and describe any three general reactions of ketones (5)
7. Explain name reaction with mechanism- Reformatsky Reaction (5)

**OR**

8. Explain name reaction with mechanism- Clemmensen reduction (5)
8. Explain the reaction mechanism involved in crossed aldol condensation (5)

**OR**

- Compare methyl alcohol, ethyl alcohol and explain the Physical properties of Alcohol? (5)

**Group-C**  
(Long Answer Type Questions)

10 x 2=20

9. Explain the mechanism of Benzoin condensation and Cannizzaro reaction (10)
10. Compare between SN1 and SN2 reaction with their mechanism and examples. (10)

**OR**

- Distinguish between Markonikov's and Anti Markonikov's reaction by showing the mechanism of action. (10)

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