



## BRAINWARE UNIVERSITY

### Term End Examination 2018 -19

Programme – Bachelor of Pharmacy

Course Name – Pharmaceutical Organic Chemistry

Course Code – BP202T

(Semester – 2)

**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. Choose the correct alternative from the following
  - (i) Ninhydrin test is given by
 

a. Alkene	b. Alkane
c. Protein	d. Carbohydrate
  - (ii) IUPAC name of  $(\text{CH}_3)_2\text{CHCH}(\text{OH})\text{CH}_2\text{C}(\text{CH}_3)_3$ 

a. 1,1-dimethyl isopentanol	b. 1,1,4,4-pentamethylbutanol
c. 2,5,5-trimethyl-3-hexanol	d. 2,5-dimethyl-4-hexanol
  - (iii) Which is not a physical property of alcohol?
 

a. Phenols are slightly soluble in water	b. The solubility of normal primary alcohols in water decrease with increasing molecular weight
c. Hydroxyl group of an alcohol is nonpolar	d. None of these
  - (iv)  $\text{CH}_3\text{CH}_2\text{OH}$  is converted into  $\text{CH}_3\text{OH}$  by
 

a. Treatment with Pyridinium Bromide	b. Treatment with $\text{KMnO}_4$
c. Catalytic hydrogenation	d. Treatment with $\text{LiAlH}_4$
  - (v) What will happen when Glycerol reacts with  $\text{H}_2\text{SO}_4$  below a temperature of  $25^\circ\text{C}$ ?
 

a. Glycerin	b. Disodium glycerolate
c. Glyceryl trinitrate	d. None of these

- (vi) The hybridization of nitrogen in an amine is
- |           |           |
|-----------|-----------|
| a. $sp^2$ | b. $sp^4$ |
| c. $sp^3$ | d. $sp$   |
- (vii) Which amine is not soluble in water?
- |                  |                   |
|------------------|-------------------|
| a. Methylamine   | b. Trimethylamine |
| c. Dimethylamine | d. Aniline        |
- (viii) Lucas reagent is
- |             |                           |
|-------------|---------------------------|
| a. $CaCl_2$ | b. Anhydrous $ZnCl_2+HCl$ |
| c. $MgSO_4$ | d. $RMgX$                 |
- (ix) Which of the following is most basic?
- |                   |                |
|-------------------|----------------|
| a. Dimethylamine  | b. Ammonia     |
| c. Trimethylamine | d. Methylamine |
- (x) Which acid is used in manufacture of vinyl acetate?
- |                |                  |
|----------------|------------------|
| a. Acetic acid | b. Benzoic acid  |
| c. Formic acid | d. Carbonic acid |
- (xi) Ketones are prepared by oxidation of
- |                     |                      |
|---------------------|----------------------|
| a. Primary alcohol  | b. Secondary alcohol |
| c. Tertiary alcohol | d. None of these     |
- (xii) Amines are generally classified as
- |              |                |
|--------------|----------------|
| a. Weak acid | b. Strong acid |
| c. Weak base | d. Strong base |
- (xiii) Amphetamine is used in the treatment of
- |                   |                    |
|-------------------|--------------------|
| a. Narcolepsy     | b. Muscle relaxant |
| c. Bronchodilator | d. Anti-spasmodic  |
- (xiv) Acetone contains
- |                                       |                                      |
|---------------------------------------|--------------------------------------|
| a. Eight sigma bonds and two pi bonds | b. Nine sigma bonds and one pi bonds |
| c. ten sigma bonds                    | d. Nine pi bonds and one sigma bonds |
- (xv) If the position of functional group is different in its isomers then this isomerism is called as
- |                               |                    |
|-------------------------------|--------------------|
| a. Functional group isomerism | b. Chain Isomerism |
| c. Position Isomerism         | d. All of them     |
- (xvi) Formalin is
- |  |  |
|--|--|
| a. 10% solution of formaldehyde in water | b. 40% solution of formaldehyde in water |
| c. 80% solution of formaldehyde in water | d. 20% solution of formaldehyde in water |

- (xvii) The compounds which have same molecular formula but they are different in their structural formula are called as
- Position isomers
  - Molecular isomers
  - Structural isomers
  - Optical isomers
- (xviii) Which of the following compounds are least soluble in water?
- OHCH<sub>2</sub>CH<sub>2</sub>OH
  - CH<sub>3</sub>CH<sub>2</sub>OH
  - CH<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>OH
  - CH<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>OH
- (xix) Linder's catalyst is
- LiAlH<sub>4</sub>
  - NH<sub>2</sub>NH<sub>2</sub>
  - Pd/BaSO<sub>4</sub> in Quinoline
  - HCl
- (xx) In the reaction of propene, H<sup>+</sup> ions acts as
- Electrophile
  - Nucleophile
  - Carbonium ion
  - Carbanion

### Group – B

(Short Answer Type Questions)

7 x 5 = 35

Answer any *seven* from the following

- How can you prepare Alkane through Wurtz's reaction and Grignard reagent? 5
- How will you distinguish: a) Aldehyde and Ketone and b) Primary, secondary and Tertiary Alcohol. 2.5+2.5
- Write a short note on Electrometric and Inductive effects. 5
- Write a short note on
  - Cannizaro Reaction 1+1+1+
  - Basicity of primary, secondary and tertiary amines 1+1
  - Preparation of Methyl alcohol from Ethyl alcohol
  - Friedel craft alkylation
  - Riemer-Tiemer Reaction.
- Write the mechanism of SN1 and SN2 reaction of Alkyl Halide. 5
- Write a note on Halogenation reaction of Alkane with mechanism. 5
- Write the preparation and uses of Acetyl salicylic acid and Benzyl Benzoate. 5
- Define Hybridization. Write briefly the SP<sup>3</sup> and SP<sup>2</sup> hybridization of Alkane. 1+4
- Why the solubility of Alkyl halide in water is low? What happens when chloroform reacts with phenol in presence of NaOH? 2.5+2.5

**Group – C**

(Long Answer Type Questions)

2 x 10 = 20

Answer any *two* from the following

11. Draw the structure of organic compounds from following IUPAC names
- |                                 |         |
|---------------------------------|---------|
|                                 | 1+1+1+1 |
| a) 3-chloro-1-butene            | +1+1+1+ |
| b) 2-chloro-2,3 dimethyl butane | 1+1+1   |
| c) 6-methyl hepta-2,4-diene     |         |
| d) 2,5 dimethyl hexane          |         |
| e) 2-methyl pent-2-ene-1-ol     |         |

Write the IUPAC name of following compounds

- |  |  |
|--|--|
| a) CH <sub>3</sub> -CHCl-CH <sub>2</sub> COOH                                  |  |
| b) CH <sub>3</sub> -CO-CH <sub>2</sub> CH <sub>3</sub>                         |  |
| c) CH <sub>3</sub> -CH(CH <sub>3</sub> ) CH <sub>2</sub> OH                    |  |
| d) CH <sub>3</sub> -CH(OH)-CH <sub>2</sub> CHO                                 |  |
| e) CH <sub>3</sub> -CH <sub>2</sub> -CH(CH <sub>3</sub> )CH <sub>2</sub> COOH. |  |
12. a) What will happen when Ethyl bromide reacts with Ammonia? 2.5+2.5+
- b) Write a note on Saytzeff rule of Alkyl halides. 3+2
- c) Write about the physical properties of Carboxylic acids.
- d) How can you prepare Acetaldehyde from Alkyl Halide through Rosenmund reaction?
13. Write the preparation, physical properties and uses of Chloroform, Iodoform and Carbon tetrachloride (CCl<sub>4</sub>). 4+3+3

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