



**RAMAGYA SCHOOL, NOIDA**  
**WORKHEET, 2017-2018**  
**SUBJECT: CHEMISTRY**  
**CLASS: XII**

**MONTH: MAY**

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1. Write short notes on the following:

- |                          |                        |                                      |
|--------------------------|------------------------|--------------------------------------|
| a. Clemmensen reduction  | b. Aldol Condensation  | c. Rosenmund reduction               |
| d. Hell-Volhard-Zelinsky | e. Cannizzaro reaction | f. Cross Aldol Condensation reaction |

1. Give the structure of the following:

- |                                     |                                   |
|-------------------------------------|-----------------------------------|
| a. Hex-2-en-4-ynoic acid            | b. 3-hydroxy butanal              |
| c. <i>p</i> -Nitropropiofenone      | d. 3-Bromo-4-phenylpentanoic acid |
| e. 3-Methylcyclohexane carbaldehyde |                                   |

2. Distinguish the following:

- |                                |                                  |
|--------------------------------|----------------------------------|
| a) Formic acid and Acetic acid | b) Phenol and benzoic acid       |
| c) Benzaldehyde and ethanal    | d) Benzaldehyde and acetophenone |

3. Give the structure of the following:

- |                                |   |
|--------------------------------|---|
| a) Hex-2-en-4-ynoic acid       | b) 2,3- dimethylcyclopentane carbaldehyde |
| c) <i>p</i> -Nitropropiofenone |   |

4. Arrange the following in the increasing order of the property given as indicated:

- a. Acetaldehyde, acetone, Di-ter-butylketone, methyl-ter-butylketone (Reactivity towards HCl)
- b) 2-Bromobutanoic acid, 3-bromobutanoic acid, 2-methypropanoic acid, butanoic acid (Acid strength)
- c)  $\text{CH}_3\text{CHO}$ ,  $\text{CH}_3\text{CH}_2\text{OH}$ ,  $\text{CH}_3\text{OCH}_3$ ,  $\text{CH}_3\text{CH}_2\text{CH}_3$  (Boiling point)
- d) Ethanal, Propanal, Propanone, Butanone (Nucleophilic addition)
- e) Benzoic acid, 4- nitrobenzoic acid, 3,4- dinitrobenzoic acid, 4- methoxybenzoic acid (acid strength)

5. Effect the following conversions:

- |                                      |   |
|--------------------------------------|---|
| a. Propanone to propene              | b. Propanal to 2-butanone                       |
| c. Ethanol to 3-hydroxy butanal      | d. Benzaldehyde to 2-hydroxyphenyl acetic acid. |
| e. Acetaldehyde to isopropyl alcohol |   |
| f. methanamine into ethanamine       |   |

6. Account for the following:

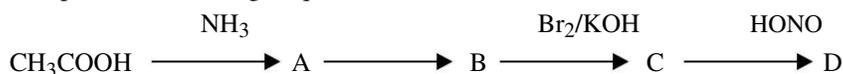
- a. Carboxylic acids do not give reactions of carbonyl group.

- b. Aldehydes are more reactive to nucleophilic addition than ketones.
- c. Carboxylic acids have higher boiling points than aldehyde, ketones and even alcohols of comparable molecular mass.
- d. Chloroacetic acid is stronger than acetic acid.
- e. There is two  $\text{-NH}_2$  groups in semicarbazide , however only one is involved in the formation of semicarbazone.
- f. Aniline is less basic than methanamine
- g. Aniline does not undergo Friedel craft reaction.

7.

- a) Write the chemical tests to distinguish between the following pairs of compounds:
  - i. Acetophenone and Benzophenone      Ethanol and Propanal
  - ii. Methanamine and ethanamine      Aniline and methanamine

8. Complete the following sequence of reactions:-



- d) 2-Bromobutanoic acid, 3-bromobutanoic acid, 2-methylpropanoic acid, butanoic acid  
(Acid strength)
- e)  $\text{CH}_3\text{CHO}$ ,  $\text{CH}_3\text{CH}_2\text{OH}$ ,  $\text{CH}_3\text{OCH}_3$ ,  $\text{CH}_3\text{CH}_2\text{CH}_3$  (Boiling point)
- d) Ethanal, Propanal, Propanone, Butanone (Nucleophilic addition)
- f) Benzoic acid , 4- nitrobenzoic acid , 3,4- dinitrobenzoic acid , 4- methoxybenzoic acid  
(acid strength)

9. Effect the following conversions:

- a. Propanone to propene
- b. Propanal to 2-butanone
- c. Ethanol to 3-hydroxy butanal
- d. Benzaldehyde to 2-hydroxyphenyl acetic acid.
- e. Acetaldehyde to isopropyl alcohol

10. Account for the following:

- a. Carboxylic acids do not give reactions of carbonyl group .
  - b. Aldehydes are more reactive to nucleophilic addition than ketones.
  - c. Carboxylic acids have higher boiling points than aldehyde, ketones and even alcohols of comparable molecular mass.
  - d. Chloroacetic acid is stronger than acetic acid.
  - e. There is two  $\text{-NH}_2$  groups in semicarbazide , however only one is involved in the formation of semicarbazone
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