

## CARBOXYLIC ACIDS

Std. XII  
CHEMISTRY

Time: 1½ Hrs  
Max.Marks: 75

## PART - I

I. Choose the correct answer:

(15 × 1 = 15)

- Which of the following is the weakest acid.
  - Acetic acid
  - Acetylene
  - Water
  - Phenol
- The compound found as stony deposits in kidney is
  - potassium oxalate
  - oxalic acid
  - potassium succinate
  - calcium oxalate
- The acid that cannot be prepared from Grignard reagent is
  - Formic acid
  - Acetic acid
  - Propionic acid
  - Benzoic acid
- The highly reactive carboxylic acid derivative among the following is
  - Acid chloride
  - Amide
  - Ester
  - Acid anhydride
- Which one of the following compound is optically active
  - $\text{CH}_3\text{CH}_2\text{COOH}$
  - $\text{HOOC} - \text{CH}_2 - \text{COOH}$
  - $\text{CH}_3\text{CH}(\text{OH})\text{COOH}$
  - $\text{Cl}_2\text{CH} - \text{COOH}$
- The IUPAC name of  $\text{CH}_3 - \text{CH}_2 - \overset{\text{CH}_3}{\underset{|}{\text{CH}}} - \text{COOH}$ 
  - 3-methylbutanoic acid
  - 2-methyl butanoic acid
  - $\alpha$ -methyl butyric acid
  - Isopentanoic acid
- Glacial acetic acid contains
  - 10% acetic acid
  - 50% acetic acid
  - 90% acetic acid
  - 100% acetic acid
- Cyclic diester can be formed by
  - lactic acid
  - acetic anhydride
  - acetaldehyde
  - ethanol
- Aspirin
  - acetyl salicylic acid
  - acetaldehyde
  - acetic anhydride
  - salicylic acid
- The compounds which undergoes haloform reaction?
  - $\text{CH}_3\text{COCH}_3$
  - $\text{CH}_3 - \text{CHO}$
  - $\text{CH}_3\text{CH}(\text{OH})\text{COOH}$
  - all the above

11. Bromination of salicylic acid
  - a White precipitate
  - b yellow precipitate
  - c black precipitate
  - d violet precipitate
12. Anthranilic acid is
  - a *o* - amino benzoic acid
  - b *p* - amino benzoic acid
  - c *o* - Hydroxy benzoic acid
  - d *m* - amino benzoic acid
13. Lactic acid is manufactured from molasses using the micro organism called
  - a Enzyme
  - b Yeast
  - c BAL
  - d Bacteria
14. The oil of winter green contains
  - a formalin
  - b methyl salicylate
  - c methyl acetate
  - d butyric acid
15. The acid present in gastric juice / opium is
  - a lactic acid
  - b pyruvic acid
  - c tartaric acid
  - d oxalic acid

### PART - II

Answer all the questions:

(10 × 3 = 30)

16. What is meant by esterification?
17. Write note on HVZ reaction.
18. Boiling point of carboxylic acids are higher than those of alcohols of same molecular mass. Reason out.
19. Mention the uses of oxalic acid.
20. How will you convert acetic acid to methyl cyanide?
21. Write note on acidic nature of acetic acid.
22. Write the conversion of Salicylic acid to Aspirin.
23. How will you prepare acetic acid using Grignard reagent?
24. Write two test of carboxylic acid.
25. What is the action of dilute sulphuric acid with lactic acid?

### PART - III

Answer all the questions:

(4 × 5 = 20)

26. Discuss the isomerism exhibited by carboxylic acid.
27. Give the mechanism of esterification.
28. How is lactic acid manufactured in large scale? How does it react with catalytic amount of conc  $H_2SO_4$ ?
29. Distinguish between formic and acetic acid.

### PART - IV

Answer all the questions:

(10 × 1 = 10)

30. (a) An aromatic compound A of molecular formula  $C_6H_5ONa$  reaction with  $CO_2/HCl$  at 403 K gives 'B' of molecular formula  $C_7H_6O_3$ . B on react with methanol in the presence of conc  $H_2SO_4$  give compound C. Compound C is called as oil of winter green. The alcohol of A coupled with diazonium salt gives D. D is a red orange dye. Identify A, B, C, D and explain with proper chemical reactions.
- (b) How is benzoic acid obtained from
  - (i)  $C_6H_5CHO$
  - (ii) phenyl cyanide
  - (iii) Carbon-di-oxide