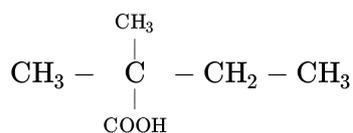




CARBOXYLIC ACIDS WORKSHEET

Class 12 - Chemistry

1. What is the correct IUPAC name of the given compound? [1]



- a) 2-Carboxyl-2-methylbutane b) 2-Ethyl-2-methylpropanoic acid
c) 3-Methylbutane carboxylic acid d) 2,2-Dimethylbutanoic acid
2. The common name for pentanedioic acid is: [1]
a) Succinic acid b) Pimelic acid
c) Oxalic acid d) Glutaric acid

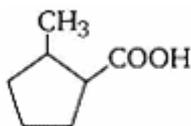
3. Match the common name given in column I with that IUPAC name given in column II: [2]

Column I	Column II
(a) Adipic acid.	(i) Benzene-1,2-dicarboxylic acid.
(b) Succinic acid.	(ii) Hexanedioic acid.
(c) Malonic acid.	(iii) Butanedioic acid.
(d) Phthalic acid.	(iv) Propanedioic acid.

4. Match the items given in column I with that in column II: [2]

Column I	Column II
(a) Acyl halide.	(i) RCOSR' .
(b) Acid anhydride.	(ii) RCOX .
(c) Acid amides.	(iii) $\text{RCOOCOR}'$.
(d) Thioester.	(iv) RCONH_2 .

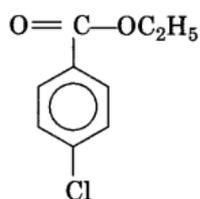
5. Give the IUPAC name of the following compound : [1]



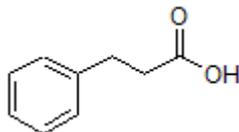
6. Name the following compound according to IUPAC system of nomenclature. [1]



7. Write the IUPAC name of. [1]



8. Draw the structure of the following compound: Hexane-1, 6-dioic acid. [1]
9. Write the structure of 2-hydroxybenzoic acid. [1]
10. Give the IUPAC name of the following compound: [1]



or $\text{PhCH}_2\text{CH}_2\text{COOH}$

11. Give the IUPAC name of the following compound: [1]
 $(\text{CH}_3)_2\text{C}=\text{CHCOOH}$
12. Write the IUPAC name of the compound. [1]
 $\text{CH}_3 - \underset{\text{OH}}{\text{C}}\text{H} - \text{CH}_2 - \text{COOH}$
13. Match the items given in column I with that in column II: [1]

Column I	Column II
(a) Acyl halide.	(i) RCOSR' .
(b) Acid anhydride.	(ii) RCOX .
(c) Acid amides.	(iii) $\text{RCOOCOR}'$.
(d) Thioester.	(iv) RCONH_2 .

- a) (a) - (ii), (b) - (iii), (c) - (iv), (d) - (i) b) (a) - (i), (b) - (ii), (c) - (iii), (d) - (iv)
- c) (a) - (iv), (b) - (i), (c) - (ii), (d) - (iii) d) (a) - (iii), (b) - (iv), (c) - (i), (d) - (ii)

14. Match the items given in column I with that in column I: [1]

Column I	Column II
(a) Aldehydes	(i) $-\text{CO}-$
(b) Ketones	(ii) $-\text{CHO}$
(c) Carboxylic Acid	(iii) $-\text{COOR}$
(d) Ester	(iv) $-\text{COOH}$

- a) (a) - (iii), (b) - (ii), (c) - (i), (d) - (iv) b) (a) - (i), (b) - (iv), (c) - (iii), (d) - (ii)
- c) (a) - (ii), (b) - (i), (c) - (iv), (d) - (iii) d) (a) - (iv), (b) - (iii), (c) - (ii), (d) - (i)

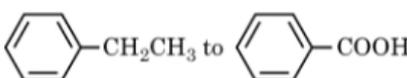
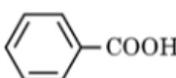
15. The compound formed as a result of oxidation of ethyl benzene by KMnO_4 is [1]
- a) Benzophenone b) Acetophenone
- c) Benzoic acid d) Benzyl alcohol

16. The compound formed as a result of oxidation of ethyl benzene by KMnO_4 is [1]

- a) Acetophenone
b) Benzoic acid
c) Benzophenone
d) Benzyl alcohol
17. The product formed as a result of reaction of CH_3MgBr and CO_2 followed by hydrolysis is: [1]
a) CH_3COCH_3
b) CH_3COOH
c) CH_3CHO
d) HCOOH
18. What compound is produced when cyclohexene is treated with concentrated KMnO_4 ? [1]
a) Succinic acid
b) Adipic acid
c) Hexanoic acid
d) Cyclohexanecarboxylic acid
19. Compounds A and C in the following reaction are _____. [1]

$$\text{CH}_3\text{CHO} \xrightarrow[\text{(ii) } \text{H}_2\text{O}]{\text{(i) } \text{CH}_3\text{MgBr}} (\text{A}) \xrightarrow{\text{H}_2\text{SO}_4, \Delta} (\text{B}) \xrightarrow[\text{oxidation}]{\text{Hydrioboration}} (\text{C})$$

a) optical isomers
b) identical
c) functional isomers
d) positional isomers
20. Complete the following reaction- [1]

$$\text{CH}_3\text{COONa} + \text{NaOH} \xrightarrow{\text{CaO}}$$
21. How will you convert acetone into ethanoic acid? [1]
22. Do the following conversions in not more than two steps: [1]
i. Toluene to Benzoic acid
ii. Benzaldehyde to 1-Phenylethanol
23. Do the following conversions in not more than two steps: [1]
a. CH_3COOH to CH_3COCH_3
b.  to 
24. **Assertion (A):** Glucose gets oxidised to six carbon carboxylic acid on reaction with bromine water. [1]
Reason (R): Glucose contains a ketonic group.
a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.
25. **Assertion (A):** RMgX on reaction with CO_2 gives $\text{R} - \overset{\text{O}}{\parallel}{\text{C}} - \text{OH}$ [1]
Reason (R): RMgX on reaction with carbonyl compounds give alcohols.
a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.
26. **Assertion:** $\text{R} - \overset{\text{O}}{\parallel}{\text{C}} - \text{OR}'$ on reduction with LiAlH_4 give carboxylic acid and alcohol. [1]
Reason: LiAlH_4 is weak reducing agent.

- a) If both Assertion and Reason are right and Reason is right explanation of Assertion.
- b) If both Assertion and Reason are right but Reason is not right explanation of Assertion.
- c) If Assertion is right but Reason is wrong.
- d) If both Assertion and Reason are wrong.

27. What compound is produced when $(\text{CH}_3)_2\text{CHCH}_2\text{Br}$ is subjected to the following sequence of steps: [1]

1. Mg, Et_2O ,
2. CO_2 ,
3. H_3O^+ ?

- a) 3 – methylbutanoic acid
- b) 2 – methylpropanoic acid
- c) 2 – methylhexanoic acid
- d) 3 – methylpropanoic acid

28. Which sequence of steps below describes the best synthesis of 5 – oxohexanoic acid starting with 1 – methylcyclopentan – 1 – ol. [1]

- a) 1. H_2SO_4 and heat
- b) 1. Conc. KMnO_4
2. O_3
2. Dry gaseous HBr
3. $(\text{CH}_3)_2\text{S}$
3. mg/ether
4. PCC
4. CO_2
- c) 1. Conc. KMnO_4
- d) 1. H_2SO_4 and heat
2. CH_3MgBr /ether
2. Conc. KMnO_4
3. H_3O^+

29. Common name of Ethan-1, 2-dioic acid is known as [1]

- a) Adipic acid
- b) Acetic acid
- c) Oxalic acid
- d) Phthalic acid

30. Match the items given in column I with that in column II: [2]

Column I	Column II
(a) Methanoic acid.	(i) Food preservation.
(b) Hexanedioic acid.	(ii) Electroplating industries.
(c) Ethanoic acid.	(iii) Manufacturing of nylon-6,6.
(d) Sodium benzoate.	(iv) Vinegar.

31. Match the items given in column I with that in column II: [1]

Column I	Column II
(a) Methanoic acid	(i) Food preservation
(b) Hexanedioic acid	(ii) Electroplating industries
(c) Ethanoic acid	(iii) Manufacturing of nylon-6-,6
(d) Sodium benzoate	(iv) Vinegar

a) (a) - (ii), (b) - (iii), (c) - (iv), (d) - (i)

b) (a) - (iii), (b) - (iv), (c) - (i), (d) - (ii)

c) (a) - (iv), (b) - (i), (c) - (ii), (d) - (iii)

d) (a) - (i), (b) - (ii), (c) - (iii), (d) - (iv)

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