CHEMISTRY

FOR IIT JEE ASPIRANTS OF CLASS 12 FOR CHEMISTRY

CARBOXYLIC ACID DERIVATIVES

Mcq S

1. Which of the following cannot reduce fehling's solution and tollen's reagent?

A. formic acid

B. acetic acid

C. formaldehyde

D. acetaldehyde

Answer: B

Watch Video Solution

2. The reaction of ethyl formate with excess of CH_3MgI followed by hydrolysis gives

A. n-propyl alcohol

B. ethanal

C. propanal

D. isopropyl alcohol

Answer: D

Watch Video Solution

3. Acid amide is converted into acid with the release of nitrogen gas by

A. HCl

B. $NaOH$

C. HNO_2

D. P_2O_5

Answer: C

Watch Video Solution

4. $CH_3CH_2COOh \xrightarrow[\text{Red P}]{Br_2} [X] \xrightarrow{NH_3\,(alc.)} [Y]$

[Y] in the above reactions is

A. lactic acid

B. ethyl amine

C. propyl amine

D. alanine

Answer: D

Watch Video Solution

5. Among the given compounds, the decreasing order of r4eactivity to nucleophilic attach at carbonyl group is

$CH_3COCl(I), CH_3CHO(II), CH_3COOCH_3(III), CH_3COOCOCH_3(IV$

A. $(I) > (II) > (III) > (IV)$

B. $(II) > (I) > (IV) > (III)$

C. $(I) > (II) > (IV) > (III)$

D. $(I) > (IV) > (III) > (II)$

Answer: D

Watch Video Solution

6. In the reaction

$C_6H_5COOCH_3 \xrightarrow{LiAlH_4} ?$ the products formed are

A. $C_6H_5COOH + CH_3OH$

B. $C_6H_5CH_2OH + CH_3OH$

C. $C_6H_5CHO + CH_3COOH$

D. all of the above

Answer: B

Watch Video Solution

7. The ease of esterification of the acids $HCOOH(I), (CH_3COOh(II), \text{ and } CH_3CH_2COOH(III)$ with CH_3OH is

A. (III) $<$ (II) $<$ (I)

B. (I) $<$ (II) $<$ (III)

C. (II) $<$ (I) $<$ (III)

D. (I) $<$ (II) $<$ (III)

Answer: A

Watch Video Solution

8. Carboxylic acids undergo ionisation due to

A. absence of $\alpha -$ hydrogen

B. resonance satabilisatio of carboxylate ion

C. high reactivity of compound

D. hydrogen bonding

Answer: B

Watch Video Solution

9. The weakest acid among the following is

A. acetic acid

B. phenol

C. water

D. acetylene

Answer: D

Watch Video Solution

10. Which of the following is the least acidic?

A. C_2H_5OH

B. CH_3COOH

C. C_6H_5OH

D. $ClCH_2COOH$

Answer: A

Watch Video Solution

11. The compound formed when malonic ester is heated with urea is

A. cinnamic acid

B. butyric acid

C. barbituric acid

D. crotonic acid

Answer: C

Watch Video Solution

12. Which of the following compounds will be optically active?

A. $(CH_3)_2CHOH$

B. $CH_3CH_2CH_2CH_3$

C. $CH_3 - CHCl - COOH$

D. $(CH_3)_3CCl$

Answer: C

Watch Video Solution

13. Which of the following is the strongest acid?

A. $HCOOH$

B. CH_3COOH

C. $(CH_3)_2CHCOOH$

D. $(CH_3)_3CCOOH$

Answer: A

Watch Video Solution

14. Which of the following is the strongest acid?

A. CF_3COOH

B. CBr_3COOH

C. CH_3COOH

D. CCl_3COOH

Answer: A

Watch Video Solution

15. Mesotartaric acid is optically inactive due to

A. the presence of a plane of symmetry

B. the absence of a plane of symmetry

C. the presence of an axis of symmetry

D. the absence of an axis of symmetry

Answer: A

Watch Video Solution

16. On bromination, propionic acid gives two isomeric 2-bromopropionic acids. This pair is an example of

A. optical isomers

B. cis-trans isomers

C. chain isomers

D. position isomers

Answer: A

Watch Video Solution

17. Identify the end product in the following sequence of rections

$$CH_3COONH_3 \xrightarrow{\Delta} X \xrightarrow[\Delta]{P_2O_5} Y \xrightarrow{H_2O/H^+} Z$$

A. $CH_3CH_2CONH_2$

B. CH_3CN

C. CH_3COOH

D. $(CH_3CO)_2O$

Answer: C

Watch Video Solution

18. Cyclohexene on oxidation with conc. $KMnO_4$ forms

A. $HOOC-(CH_2)_4-COOH$

B. $HOOC-(CH_2)_3-COOH$

C. $HOOC-(CH_2)_3-\overset{\overset{O}{||}}{C}-CH_3$

D. $HOOC-(CH_2)_4-CH_3$

Answer: A

Watch Video Solution

19. Ethanol reacts with acetyl chloride to form

A. ethyl chloride

B. acetic acid

C. methyl acetate

D. ethyl acetate

Answer: D

Watch Video Solution

20. Which of the following has the maximum acidic strength?

A. o-nitrobenzoic acid

B. m-nitrobenzoic acid

C. p-nitrobenzoic acid

D. p-nitrophenol

Answer: A

Watch Video Solution

21. Which of the following will undergo decarboxylation easily?

A. $C_6H_5CO - CH_2 - COOH$

B. $C_6H_5 - CO - COOH$

C. $C_6H_5 - \underset{\underset{OH}{|}}{C}H - COOH$

D. $C_6H_5 - \underset{\underset{NH_2}{|}}{C}H - COOH$

Answer: A

Watch Video Solution

22. On strong heating, ammonium acetate gives

A. acetamide

B. methyl cyanide

C. urea

D. formamide

Answer: A

Watch Video Solution

23. In the following reaction, idetify 'X' among the given compounds

$C_6H_5COOHCH_3 \xrightarrow{LiAlH_4} 'X'$

A. $C_6H_5COOH + CH_3OH$

B. $C_6H_5CH_2OH + CH_3OH$

C. $C_6H_5CHO + CH_3COOH$

D. $C_6H_5CHO + CH_3OH$

Answer: B

Watch Video Solution

24. When propionic acid is treated with aqueous sodium becarbonate, CO_2 is liberated. The carbon of CO_2 comes from

A. methyl group

B. carboxylic acid group

C. methylene group

D. bicarbonate

Answer: D

Watch Video Solution

25. Which of the following compounds is most susceptible to a nucleophilic attack at the carbonyl group?

A. $MeCONH_2$

B. $MeCoCl$

C. $MeCOOMe$

D. $MeCOOCOMe$

Answer: B

Watch Video Solution

Exercise 1

1. In the reaction

$$CH_3 - C \equiv C - H \xrightarrow{CH_3MgBr} CH_4 + (A) \xrightarrow[(ii)\quad H_2O/H^{\oplus}]{(i)\quad CO_2} (B)$$ (B) will be

A. $CH_3 - C \equiv C - CH_3$

B. $CH_3 - C \equiv C - MgBr$

C. $CH_3 - C \equiv C - COOH$

D. $CH_3 - CH = CH - COOH$

Answer: C

Watch Video Solution

2. In the reaction sequence

$$CH_3 - \overset{\overset{O}{||}}{C} - H \xrightarrow[\overset{\ominus}{OH}]{HCN} (A) \xrightarrow[\Delta]{H_2O/H^{\oplus}} \text{product,}$$

Product will be

A. $CH_3 - \overset{\overset{OH}{|}}{\underset{\underset{H}{|}}{C}} - COOH$

B. $HOOC - \overset{\overset{OH}{|}}{\underset{\underset{H}{|}}{C}} - CH_3$

C. Mixture of $CH_3 - \overset{\overset{OH}{|}}{\underset{\underset{H}{|}}{C}} - COOH$ and $HOOC - \overset{\overset{OH}{|}}{\underset{\underset{H}{|}}{C}} - CH_3$

D. $CH_3 - \overset{\overset{OH}{|}}{C}H - CONH_2$

Answer: C

Watch Video Solution

3. In the given reaction

$$CH_3CHO \xrightarrow[(ii)\ .\quad H_2O/H^{\oplus}/\Delta]{(i)\ .\quad NaCN/HCl} (A) \xrightarrow[\text{reagent}]{\text{Fenton}} (B)$$

(B) will be

A. acetic acid

B. Oxalic acid

C. Pyruvic acid

D. Citric acid

Answer: C

Watch Video Solution

4. In the given reaction

$$C_6H_5 - \overset{O}{\overset{||}{C}} - CH_3 \xrightarrow[(ii)\,.\quad H^{\oplus}]{(i)\,.\quad Br_2/KOH} CHBr_3 + [X]$$

[X] will be:

A. $C_6H_5 - CHO$

B. C_6H_5COOH

C. $C_6H_5 - CH_2OH$

D. CH_3COOH

Answer: B

Watch Video Solution

5. Sodium bicarbocate reacts with salicylic acid to form

A. C_6H_5Ona

B. 

C. 

D. 

Answer: B

Watch Video Solution

6. Which of the following compounds gives carbondioxide with $NaHCO_3$?

A. acetic acid

B. hexanol

C. Phenol

D. acetylene

Answer: A

Watch Video Solution

7. Which of the following will not soluble in sodiium bicarbonate solution?

A. 

B. 

C. 

D. 

Answer: C

View Text Solution

8. Consider the given reaction

$$RCOOAg \xrightarrow{Br_2 / \Delta} R - Br$$

Which one of the following aicd will give maximum yield of R-Br in the above reaction?

A. $CH_3 - \underset{\underset{CH_3}{|}}{C}\ H - COOH$

B. $CH_3 - CH_2 - CH_2 - COOH$

C. $CH_3 - \underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}} - COOH$

D. all will give same yield

Answer: B

Watch Video Solution

9. In the given reaction $CH_3 - CH_2 - COOH \xrightarrow[(ii).\ Br_2/\Delta]{(i).\ AgNO_3} [X]$

[X] will be

A. Ethyl bromide

B. Propyl bromide

C. Propyl propanoate

D. All of these

Answer: A

Watch Video Solution

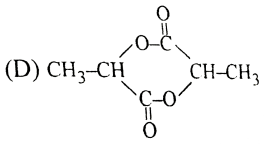
10. In the reaction sequence ltBrgt $CH_3 - \underset{OH}{\underset{|}{CH}} - COOH \xrightarrow{\Delta} [Y]$

[Y] will be

A. $(A)\ CH_3-\overset{O}{\overset{\diagup\diagdown}{CH}}-C=O$

B. $CH_2 = CH - COOH$

C. $\overset{OH}{\underset{|}{C}}H_2 - CH_2 - COOH$

D. 

Answer: D

Watch Video Solution

11. Which one of the following on heating gives unsaturated acid:

A. α — hydroxy acid

B. β — Hydroxy acid

C. γ-Hydroxy acid

D. δ-Hydroxy acid

Answer: B

Watch Video Solution

12. Which will form lactone on treatment with NaOH?

A. α-Bromo acid

B. β-Bromo acid

C. $\beta -$ Hydr4oxy acid

D. δ-Bromo acid

Answer: D

Watch Video Solution

13. Which of the following will undergoes decarboxylatio on heating?

A. Succinic acid

B. Phthalic acid

C. Malonic acid

D. Glutaric acid

Answer: C

Watch Video Solution

14. In which reaction major product is hydrocarbon?

A. $RCOOK \xrightarrow{\text{Electrolysis}}$

B. $RCOOAg \xrightarrow{I_2 / \Delta}$

C. $CH_3 - CH_3 \xrightarrow{Cl_2 / hv}$

D. $CH_3 - \underset{\displaystyle CH_3}{\overset{\displaystyle CH_3}{\overset{|}{\underset{|}{C}}}} - Cl$

Answer: A

Watch Video Solution

15. In the given reaction

$$CH_3 - COOH \xrightarrow[\substack{(iii).\ H_2O/H^{\oplus}/\Delta}]{\substack{(i).\ Br_2/\text{red P} \\ (ii).\ NaCN}} [X]$$

[X] will be

A. CH_3COOH

B. $COOH - CH_2 - CH_2 - COOH$

C. 

D. 

Answer: A

Watch Video Solution

16. Arrange these esters in decreasing order of ease of esterfication with

$CH_3OH/H^{\oplus}$

(I). $CH_3 - \underset{\underset{CH_3}{|}}{C}\ H - COOH$

(II). $CH_3 - \underset{\underset{CH_3}{|}}{C}\ H - CH_2 - COOH$

(III). $CH_3 - \overset{CH_3}{\underset{CH_3}{C}} - COOH$

(IV). $(CH_3 - CH_2)_3C - COOH$

A. II $>$ I $>$ III $>$ IV

B. I $>$ II $>$ III $>$ IV

C. III $>$ IV $>$ II $>$ I

D. IV $>$ III $>$ II $>$ I

Answer: A

Watch Video Solution

17. In the given reaction:

[X] will be

A. 

B. 

C. 

D. 

Answer: B

View Text Solution

18. Benzoic acid on treatment with hydrazoic acid (N_3H) in the presence of concentrated sulphuric acid gives:

A. Benzamide

B. Sodium benzoate

C. Aniline

D. $C_6H_5CON_3$

Answer: C

Watch Video Solution

19. what are X and Y

A. 

B. 

C. 

D. 

Answer: A

View Text Solution

20. Which optically active compound on reduction with $LiAlH_4$ will give optically inactive compound?

A. $(A)\ CH_3-\underset{\displaystyle OCH_3}{\underset{|}{CH}}-COOH$

B. $CH_3-CH_2-\underset{\displaystyle OH}{\underset{|}{CH}}-COOH$

C. $(C)\ CH_3-CH_2-\underset{\displaystyle CH_2OH}{\underset{|}{CH}}-COOH$

D. $CH_3 - \underset{\underset{|}{OH}}{CH} - CH_2 - COOH$

Answer: C

Watch Video Solution

21. Reducing property of formic acid is due to the presence of:

A. $-OH$

B. $-\overset{\overset{||}{O}}{C} - H$

C. $-\overset{\overset{||}{O}}{C} - OH$

D. all of these

Answer: B

Watch Video Solution

22. Which acid can be oxidised by Fehling solution:

A. Malonic acid

B. Acetic acid

C. Oxalic acid

D. Formic acid

Answer: D

Watch Video Solution

23. In the given reaction:

$[X] + \text{Acetic anhydride} \rightarrow \text{Aspirin}$

[X] will be

A. Benzoic acid

B. o-methoxybenzoic acid

C. o-Hydroxybenzoic acid

D. p-Hydroxybenzoic acid

Answer: C

Watch Video Solution

24. Arrange following compound in decreasing order order of reactivity for hydrolysis reaction:

(I). C_6H_5COCl

(II). 

A. IIgtIVgtIgtIII

B. IIgtIVgtIIIgtI

C. IgtIIgtIIIgtIV

D. IVgtIIIgtIIgtI

Answer: A

View Text Solution

25. In the given reaction:

[X] will be

A. $HOOC - CH_2 - CH_2 - \overset{OH}{\overset{|}{C}}H - CH_3$

B. $CH_3CH_2 - CH_2 - CH_2 - COOH$

C. $HO - CH_2 - CH_2 - CH_2 - COOH$

D. $CH_3 - CH_2 - \underset{OH}{\underset{|}{C}}H - CH_2 - COOH$

Answer: A

View Text Solution

26. In the given reaction :

[X] will be

A. 

B. 

C. 

D. $CH_3 - \overset{\overset{O}{||}}{C} - CH_2 - COOH$

Answer: C

View Text Solution

27. Which one of the following esters cannot undergo self Claisen condensation?

A. $CH_3 - CH_2 - CH_2 - COOC_2H_5$

B. $C_6H_5COOC_2H_5$

C. $C_6H_{11} - CH_2 - COOC_2H_5$

D. $C_6H_5 - CH_2COOC_2H_5$

Answer: B

Watch Video Solution

28. In the given reaction:

$$CH_3-\underset{\underset{CH_3}{|}}{C}H-\overset{\overset{O}{||}}{C}-CH_2-CH_3 \xrightarrow{CF_3COOOH} [X]$$ as main product

[X] will be

A. $CH_3-CH_2-\overset{\overset{O}{||}}{C}-O-\underset{\underset{CH_3}{|}}{C}H-CH_3$

B. $CH_3-\underset{\underset{CH_3}{|}}{C}H-\overset{\overset{O}{||}}{C}-O-CH_2-CH_3$

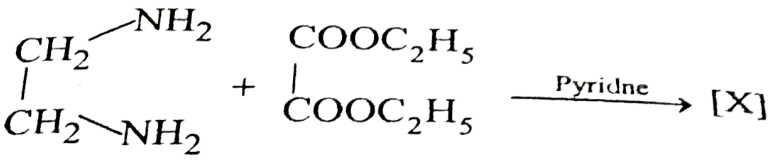
C. $CH_3-\overset{\overset{O}{||}}{C}-OC(CH_3)_3$

D. $(CH_3)_3COOCH_3$

Answer: A

Watch Video Solution

29. In the given reaction:



[X] will be:

A. 

B. 

C. 

D. 

Answer: B

View Text Solution

30. Acetic anhydride and ammonia gives the product:

A. CH_3CONH_2

B. $CH_3CONHCH_3$

C. CH_3CN

D. CH_3COONH_4

Answer: A

Watch Video Solution

31. In the givenr reaction:

[A] and [B] respectively be:

A. 

B. 

C. 

D. Both are $HO-CH_2-CH_2-CH_2-\underset{\underset{OH}{|}}{C}H-CH_2OH$

Answer: A

View Text Solution

32. The treatment of an open chain ester with $LiAlH_4$ followed by acid hydrolysis produces:

A. Two aldehyde

B. One carboxylic acid and one alcohol

C. Two alcohols

D. Two acids

Answer: C

Watch Video Solution

33. The reduction of benzoyl chloride with Pd and $BaSO_4/CaCO_3$ produces:

A. Benzyl chloride

B. Benzoic acid

C. Benzaldehyde

D. All of these

Answer: C

Watch Video Solution

34. 

Z is:

A. 

B. 

C. 

D. 

Answer: C

View Text Solution

35. Which one of the following compounds gives carboxylic acid with HNO_2?

A. $C_6H_5-\overset{O}{\overset{||}{C}}-Cl$

B. $C_6H_5CONH_2$

C. $CH_3-\overset{O}{\overset{||}{C}}-O-\overset{O}{\overset{||}{C}}-CH_3$

D. $CH_3COOC_2H_5$

Answer: B

Watch Video Solution

36. In the given reaction sequence:

(B) will be:

A. 

B. 

C. 

D. 

Answer: B

View Text Solution

Exercise 2

1. 

An unknown compound having molecular formula $C_8H_4O_2Cl_2$ can give following set of reactions. Your Answer 1 to 4 on basic of this reaction sequence.

What could be the structure of A:

A. 

B. 

C. 

D. 

Answer: C

View Text Solution

2. 

An unknown compound having molecular formula $C_8H_4O_2Cl_2$ can give following set of reactions. Your Answer 1 to 4 on basic of this reaction sequence.

What could be the structure of B:

A. 

B. 

C. 

D. 

Answer: C

View Text Solution

3. 

An unknown compound having molecular formula $C_8H_4O_2Cl_2$ can give following set of reactions. Your Answer 1 to 4 on basic of this reaction sequence.

Structure of D is (Stable one)

A. 

B. 

C. 

D. 

Answer: B

View Text Solution

4.

An unknown compound having molecular formula $C_8H_4O_2Cl_2$ can give following set of reactions. Your Answer 1 to 4 on basic of this reaction sequence.

Structure of C is

A.

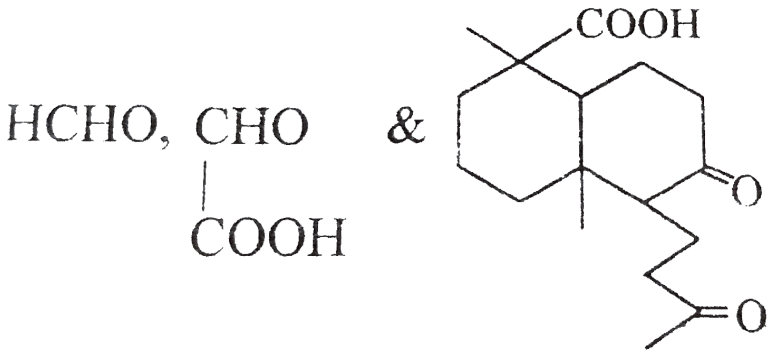
B.

C.

D.

Answer: A

View Text Solution



5.

Ozonolysis of a compound Agathene dicarboxylic acid gives following compounds:

On complete reduction by $Na - EtOH$. Agathene dicarboxylic acid give hydrocarbon $C_{20}H_{38}$ which have 5 chiral carbon it.

Q. The structure of Agathene dicarboxylic acid is-

A.

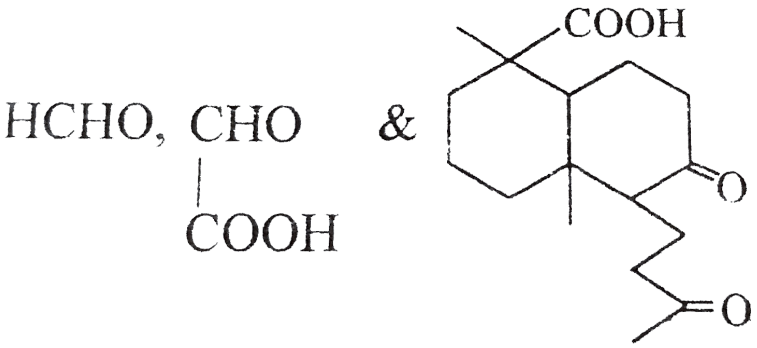
B.

C.

D.

Answer: A

Watch Video Solution



6.

Ozonolysis of a compound Agathene dicarboxylic acid gives following compounds:

On complete reduction by $Na - EtOH$, Agathene dicarboxylic acid give hydrocarbon $C_{20}H_{38}$ which have 5 chiral carbon in it.

Q. How many chiral carbon are present in Agathene dicarboxylic acid:

A. 2

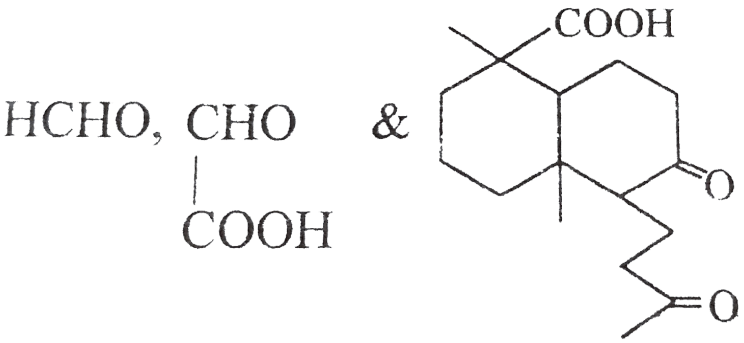
B. 3

C. 4

D. 5

Answer: C

Watch Video Solution



7.

Ozonolysis of a compound Agathene dicarboxylic acid gives following compounds:

On complete reduction by $Na - EtOH$. Agathene dicarboxylic acid give hydrocarbon $C_{20}H_{38}$ which have 5 chiral carbon it.

Q. Total stereoisomers possible for agathene dicarboxylic acid are:

A. 16

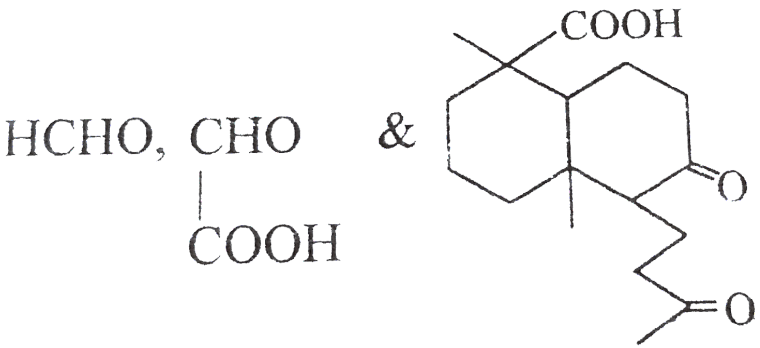
B. 18

C. 32

D. 64

Answer: C

Watch Video Solution



8.

Ozonolysis of a compound Agathene dicarboxylic acid gives following compounds:

On complete reduction by $Na - EtOH$. Agathene dicarboxylic acid give hydrocarbon $C_{20}H_{38}$ which have 5 chiral carbon it.

Q. Structure of product formed when agathene dicarboxylic acid is heated with soda lime is:

A.

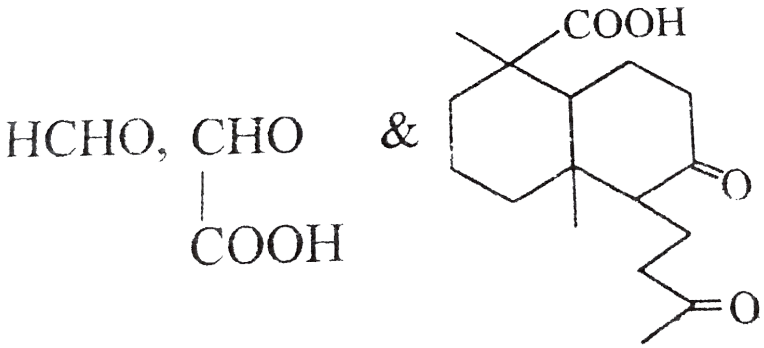
B.

C. 

D. 

Answer: A

Watch Video Solution



9.

Ozonolysis of a compound Agathene dicarboxylic acid gives following compounds:

On complete reduction by $Na - EtOH$. Agathene dicarboxylic acid give hydrocarbon $C_{20}H_{38}$ which have 5 chiral carbon it.

Q. True statement about agathene dicarboxylic acid is:

A. it is a saturated compound

B. it gives red colour with 2,4-dinitrophenyl hydrazine

C. it gives off effervescence of $\overset{12}{C}O_2$ with $NaH\overset{14}{C}O_3$

D. none of the above

Answer: D

Watch Video Solution

10.

Product C and D are

A. $H-\overset{O}{\overset{||}{C}}-\overset{O}{\overset{||}{C}}-OH+MeOH$

B. $H-\overset{O}{\overset{||}{C}}-\overset{O}{\overset{||}{C}}-\overset{18}{O}H+MeOH$

C. $H-\overset{O}{\overset{||}{C}}-\overset{O}{\overset{||}{C}}-OH+Me\overset{18}{O}H$

D. $HO-\overset{O}{\overset{||}{C}}-\overset{O}{\overset{||}{C}}-OH+Me\overset{18}{O}H$

Answer: C

View Text Solution

11.

Mechanism for hydrolysis of A will be

A. A_{AC^2}

B. A_{AL^1}

C. A_{AC^1}

D. A_{AL^2}

Answer: A

View Text Solution

12.

F is.

A. $H-\underset{\underset{O}{||}}{C}-\underset{\underset{OH}{|}}{CH}-\underset{\underset{O}{||}}{C}-\underset{\underset{O}{||}}{CH}$

B. $H-\underset{\underset{O}{||}}{C}-\underset{\underset{O}{||}}{C}-OH$

C. 

D. 

Answer: D

View Text Solution

13. 

Mechanism of formation of A and B is

A. A_{AC^2}

B. A_{AC^1}

C. A_{AL^1}

D. A_{AL^2}

Answer: A

View Text Solution

14. 

Select the true statement

A. Both B and C give same name eraction with KOH

B. Both B and C give iodoform test

C. Both B and C give chiral product with PhMgCl followed by NH_4Cl

D. Both B and C are redox reaction

Answer: D

View Text Solution

15. 

Best method out of the given to prepare B is

A. $H-\overset{\overset{O}{||}}{C}-Cl \xrightarrow{MeMgBr}$

B. $H-\overset{\overset{O}{||}}{C}-Cl \xrightarrow{Me_2Cd}$

C. $H-\overset{\overset{O}{||}}{C}-OMe \xrightarrow{MeMgCL}$

D. $H-\overset{\overset{O}{||}}{C}-OMe \xrightarrow{Me_2Cd}$

Answer: B

View Text Solution

16.

Statement-I: is optically inactive, it is taken in a glass container and plane polarized light (PPL) is passed through it after heating it for several minutes The PPL shows significant optical rotation.

Statement-II: Like β-keto acid, gem dicarboxylic acid eliminates CO_2 on heating.

A. If both statement-I& statement-II are true but statement-II is a correct explanation of the statement I.

B. If both statement-I & statement-II are true but statement-II is not a correct explanation of the statement-I

C. If statement-I is true but the statement-II is false

D. If statement-I is false but the statement-II is false

Answer: D

View Text Solution

17. Statement-I:

$$Me_3C-\overset{\overset{O}{||}}{C}-OH+\overset{18}{MeOH}\xrightarrow{conc.H_2SO_4}Me_3C-\overset{\overset{O}{||}}{C}-\overset{18}{O}Me \text{ (Major)}$$

Statement-II: During esterification removed water molecule contains H of alcohol and OH of carboxylic acid.

A. If both statement-I& statement-II are true but statement-II is a correct explanation of the statement I.

B. If both statement-I & statement-II are true but statement-II is not a correct explanation of the statement-I

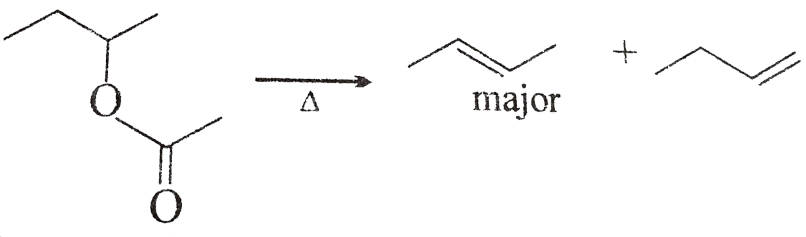
C. If statement-I is true but the statement-II is false

D. If statement-I is false but the statement-II is false

Answer: D

View Text Solution

18.



Statement-I:

Statement-II: 2-butene is more stable than -2butene as it is having more $\alpha - H$.

A. If both statement-I& statement-II are true but statement-II is a correct explanation of the statement I.

B. If both statement-I & statement-II are true but statement-II is not a correct explanation of the statement-I

C. If statement-I is true but the statement-II is false

D. If statement-I is false but the statement-II is false

Answer: D

Watch Video Solution

19. Which of the following will liberate CO_2 on reaction with $NaHCO_3$

A. 

B. CH_3COOH

C. 

D. 

Answer: B::C

View Text Solution

20. RCOOR' can be prepared by:

A. esterification of $RCOOH$

B. esterification of $(RCO)_2O$

C. Baeyer-Villiger oxidation of $RCOR$ with peroxy acid

D. reaction of $RCOCl$ with ROH

Answer: A::B::C::D

Watch Video Solution

21. Which of the following compounds will give acetic acid with $KMnO_4 / H^{\oplus} / \Delta$:

A. $CH_3 - CHO$

B. $CH_3 - CH = CH - CH_3$

C. $CH_3 - C \equiv C - CH_3$

D. CH_3CH_2OH

Answer: A::B::C::D

Watch Video Solution

22. Acetic acid can be used for the preparation of

A. Ethane

B. Methane

C. Acetone

D. Ethanol

Answer: A::B::C::D

Watch Video Solution

23. Which of the following will form acetyl chloride with PCl_5?

A. $MeCOOH$

B. $MeCOOMe$

C. $MeCOOCOMe$

D. $Me-CONH_2$

Answer: A::B::C

Watch Video Solution

24. Consider the following reaction:

$$CH_3-\overset{\overset{O}{||}}{C}-OH+CH_3-OH \overset{H^{\oplus}}{\Longleftrightarrow} CH_3-\overset{\overset{O}{||}}{C}-O-CH_3+HOH$$

True about the reaction is:

A. product is having smell like fruit

B. Nucleophilic addition followed by elimination reaction

C. follows $A_{AC'}$ mechanism

D. it is irreversible reaction

Answer: A::B

Watch Video Solution

25. Which one of the following compounds will give HVZ reaction?

A. 

B. 

C. 

D. 

Answer: B::C

View Text Solution

26. Sodium salt of which one of the monobasic acids on electrolysis does not give hydrocarbon:

A. C_6H_5COOH

B. $HCOOH$

C. $Me_3C - COOH$

D. $COOH - CH = CH - COOH$

Answer: B

Watch Video Solution

27. Which one of the following acids undergoes decarboxylation on strong heating:

A. Adipic acid

B. 3- oxo butanoic acid

C. Formic acid

D. Salicylic acid

Answer: A and B

Watch Video Solution

28. Which one of the following compounds is least reactive with water?

A. $CH_3 - \overset{\overset{O}{||}}{C} - Cl$

B. $C_6H_5 - \overset{\overset{O}{||}}{C} - NH_2$

C. $CH_3 - \overset{\overset{O}{||}}{C} - NH_2$

D. $C_6H_5 - \overset{\overset{O}{||}}{C} - Cl$

Answer: B

Watch Video Solution

29. Acetic anhydride is used as:

A. Solvent

B. Dehydrating agent

C. Acetylating agent

D. Antiseptic

Answer: A::B::C

Watch Video Solution

30. In the given reaction

$$R-\overset{\overset{O}{||}}{C}-OH \xrightarrow{[X]} R-\overset{\overset{O}{||}}{C}-O-CH_3$$

[X] will be:

A. CH_2N_2

B. $CH_3OH/H^{\oplus}$

C. $MeCOOH$

D. Me_2SO_4

Answer: A::B::D

Watch Video Solution

31. Which of the followig gives silver mirror test?

A. HCOOH

B. $CH_3COCHOHCH_3$

C. Tartaric acid

D. Glucose

Answer: A::B::C::D

Watch Video Solution

32. Which compound will liberate CO_2 from $NaHCO_3$?

A. CH_3CONH_2

B. CH_3NH_2

C. $(CH_3)_4N^+OH^-$

D. $CH_3N^+H_3Cl^-$

Answer: D

Watch Video Solution

33. Which of the following compound can be produced if 1-propane amine is treated with $NaNO_2$ and HCl

A. Propane-1-ol

B. Propane-2-ol

C. 2-Chloropropane

D. 2-Propaneamine

Answer: A::B::C

Watch Video Solution

34. HOFFMANN BROMAMIDE DEGRADATION REACTION

A. Imide

B. Acid chloride

C. Acid anhydride

D. Amide

Answer: A::D

Watch Video Solution

35.

$$CH_3 - \overset{O}{\overset{||}{C}} - O - CH_2 - CH_3 \xrightarrow{H\overset{18}{O}H / H^{\oplus}} \Leftrightarrow \text{Ethanoic acid} + \text{Ethanol}$$

Isotopic oxygen of water will be present with

A. Ethanoic acid

B. Ethanol

C. After some time it will also be present in some molecules of ester

D. none of these

Answer: A::C

Watch Video Solution

36. Match the column-

Column I organic compounds oxidised by KIO_4	Column II products of KIO_4 oxidation
$(A).\quad CH_3COCHO$	$(P)\quad PhCH=O+HCOOH$
$(B).\quad$ 1,2k-cyclohexane dione	$(Q).\quad CH_3CH_2CHO+HOOCCH$
$(C).\quad PhCH(OH)CHO$	$(R).\quad HOOC(CH_2)_4COOH$
$(D).\quad CH_3CH_2CH(OH)COCH_3$	$(S).\quad CH_3COOH+HCOOH$

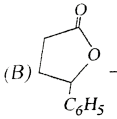
View Text Solution

37. Match the column

Column I	Column II
$(A).\quad CH_3MgBr$	$(P).\quad PhCH_2COCl$
$(B).\quad PCl_5$	$(Q).\quad PhCH_2COOC$
$(C).\quad NH_3$, followed by heating	$(R)\quad CH_4$
$(D).\quad CH_3OH$ in the presence of conc. H_2SO_4	$(S).\quad PhCH_2CONH$

View Text Solution

38. Match the column

Column I		Column II	
(A) $PhCONH_2 \longrightarrow PhCH_2OH$		(P)	B_2H_6 . AcOH, H_2O
(B)  $\longrightarrow HO\text{-}CH_2\text{-}(CH_2)_2\text{-}CH(OH)\text{-}C_6H_5$		(Q)	$LiAlH_4$
(C) $C_6H_5CH = CH\text{-}COOH \rightarrow C_6H_5 - CH = CH_2OH$		(R)	H_2 , Pd , $BaSO_4$
(D) $CH_3COCl \longrightarrow CH_3\text{-}CHO$		(S)	None

View Text Solution

39. Match the column -

Column I		Column II	
$(A).$	$RCN \xrightarrow{\text{reduction}}$	(P)	1° Amine
$(B).$	$RCN \xrightarrow[(ii)\, H_2O]{(i)\, CH_3MgBr}$	$(Q).$	Alcohol
$(C).$	$RNC \xrightarrow{\text{hydrolysis}}$	$(R).$	Ketone
$(D).$	$RNH_2 \xrightarrow{HNO_2}$	$(S).$	Acid

Watch Video Solution

Exercise 3

1. 

View Text Solution

2. $R-COOH \xrightarrow[\Delta]{ND_3} (A) \xrightarrow[\Delta]{Br_2, KOH} (B) \xrightarrow{NaNO_2+HCl} (C)$

Watch Video Solution

3. 

View Text Solution

4. 

View Text Solution

5. 

View Text Solution

6. 

View Text Solution

7. 

View Text Solution

8.

$$PhMe + (A) \xrightarrow{AlCl_3} p - MeC_6H_4 - CO - CH_2 - CH_2COOH \xrightarrow{Zn\,/\,Hg\,/\,HCl}$$

View Text Solution

9.

$$CH_3(CH_2)_{14}CH_2CH_2COOH \xrightarrow{Br_2/PBr_3} (A) \xrightarrow[(ii)\,H^+]{(i)\,Alk.KOH} (B) \xrightarrow{(C)} CH_3(CH_2$$

View Text Solution

10. 

View Text Solution

11. 

View Text Solution

12. 

View Text Solution

13. 

View Text Solution

14. Phthalic acid $+NH_3 \rightarrow D \xrightarrow{\Delta} E$

View Text Solution

15. $MeCH(CH_2COOH)_2 \xrightarrow[\Delta]{(CH_3CO)_2O} F$

View Text Solution

16. 

View Text Solution

17. 

View Text Solution

18. Fluoro acetic acid is stronger than chloro acetic acid.

View Text Solution

19. Give reasons for the following :

'Carbon-oxygen bond lengths in formic acid aer 1.23Å and 1.36Å and both carbon-oxygen bonds in sodium formate have the same value, i.e., 1.27Å.

Watch Video Solution

20. Give reasons for the following in one or two sentences.

'Acetic acid can be halogenated in the presence of P and Cl_2, but formic acid cannot be halogenated in the same way'.

Watch Video Solution

21. (a) Write the resonance structure of carboxylic acid derivative $\left(R - \underset{\underset{O}{||}}{C} - G \right)$ and account for the stability and electrophilic character of the $(C = O)$ group.

(b) Why is the $(C - G)$ bond in the acid derivative shorter and stronger than the $(R - G)$ bond in alkyl derivative ?

(c) Write the eclipsed configuration structures for $N - methyl$ ethanamide about the $(C - N)$ bond.

Watch Video Solution

22. (a) Why do acyl chlorides undergo nucleophilic attack more readily than alkyl chlorides ?

(b) What is hydroxamic acid test and which functional group is determined by this test ?

Watch Video Solution

23. Primary and secondary amide exist as dimer in solid and pure liquid state.

View Text Solution