

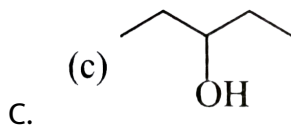
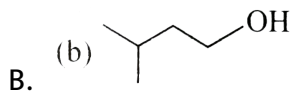
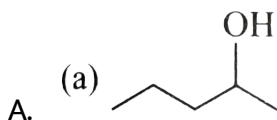
CHEMISTRY

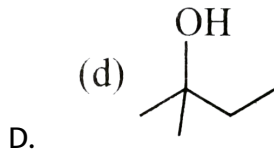
BOOKS - A2Z CHEMISTRY (HINGLISH)

ALDEHYDES, KETONES AND CARBOXYLIC ACID

Methods Of Preparation Of Aldehydes And Ketones

1. An optically active compound molecular formula $C_5H_{12}O(X)$. X oxidation with CrO_3/H_2SO_4 given an achiral $C_5H_{10}O$. Hence, X could be

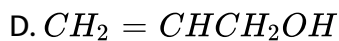
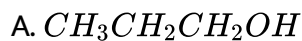




Answer: A

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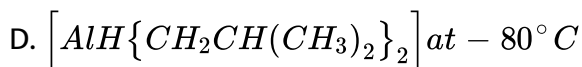
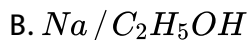
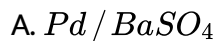
2. When $CH_2 = CHOOH$ is reduced with $LiAlH_4$, the compound obtained is



Answer: D

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3. Which reagent below cannot reduced with an acid chloride to an aldehyde?

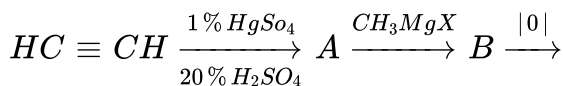


Answer: B



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4. The end produce in the following sequence of reaction is



A. Acetic acid

B. Isopropyl alcohol

C. Acetone

D. Ethanol

Answer: C

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5. The incorrect statement regarding oxo process for synthesis of an aldehyde is

- A. This process can also be used in the same manner for the synthesis of ketone
- B. $Co_2(CO)_8$ may be used as a catalyst
- C. $[Co(CO)_4H]$ may act as a catalyst
- D. Mixture of Co and H_2 is allowed to react with an alkene

Answer: A

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6. The best reagent to convert pent-3-en-2-ol into pent-3-en-2-one is

A. Acidic $KMnO_4$

B. Alkaline $K_2Cr_2O_7$

C. Chromic anhydride in glacial acetic acid

D. Pyridinium chlorochromate

Answer: D



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7. Compound which gives acetone on ozonolysis

A. $CH_3 - CH = CH - CH_3$

B. $(CH_3)_2C = C(CH_3)_2$

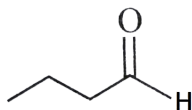
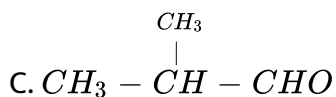
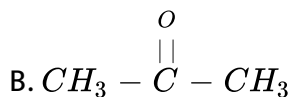
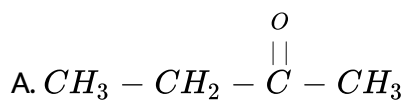
C. $C_6H_5CH = CH_2$

D. $CH_3CH = C = CH_2$

Answer: B

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8. A hydrocarbon X has molecular formula C_5H_{10} . X on treatment with B_2H_6 in $H_2O_2/NaOH$ gives an optically active $C_5H_{12}O$ which on treatment with CrO_3/HCl /pyridine gives $C_5H_{10}O$ which is still chiral. Which of the following can be a product of reductive ozonolysis of X?

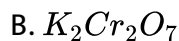
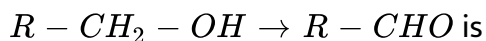


D.

Answer: C

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9. The most suitable reagent for the conversion of

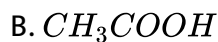
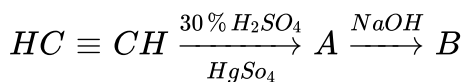


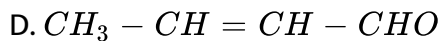
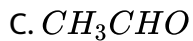
Answer: D



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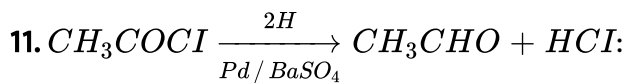
10. Predict the product 'B' in the sequence of reaction





Answer: D

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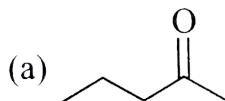
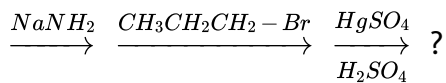
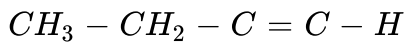
The above reaction is called

- A. Reimer - Tiemann reaction
- B. Cannizzaro reaction
- C. Rosenmund reaction
- D. Reformatsky reaction

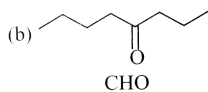
Answer: C

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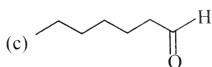
12. What is the final major product of the following reaction



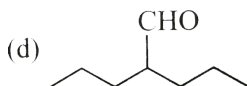
A.



B.



C.

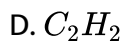
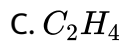
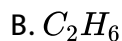


D.

Answer: B

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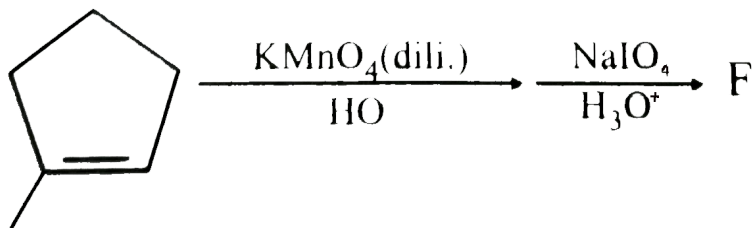
13. Which of the following gases when passes through warm dilute solution of H_2SO_4 in presence of $HgSO_4$ gives acetaldehyde?

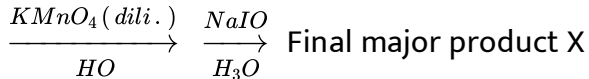


Answer: D

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14. Consider the following reaction sequence





The correct statement regarding X is

- A. It has an aldehyde functional group
- B. It has both aldehyde and ketone functional group
- C. It has a ketone functional group
- D. It has a ketone and an acid functional group

Answer: B

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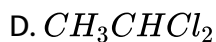
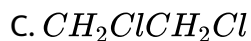
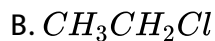
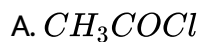
15. Catalyst $SnCl_2 / HCl$ is used in

- A. Stephen's reduction
- B. Cannizzaro reduction
- C. Clemmensen's reduction
- D. Rosenmund's reduction

Answer: A

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16. Which of the following on heating with aqueous KOH produces acetaldehyde?



Answer: D

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17. CH_3COCH_3 can be obtained by

A. Heating acetaldehyde with methanol

B. Oxidation of propyl alcohol

C. Oxidation of isopropyl alcohol

D. Reduction of propionic acid

Answer: C

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18. Benzaldehyde can be prepared by oxidation of toluene by

A. Acidic $KMnO_4$

B. $K_2Cr_2O_7$

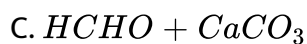
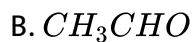
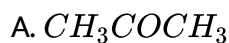
C. CrO_2Cl_2

D. All of these

Answer: C

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19. On heating calcium acetate and calcium formate, the product formed is :



Answer: D



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20. Which of the following compound gives a ketone with Grignard reagent?

A. Formaldehyde

B. Ethyl alcohol

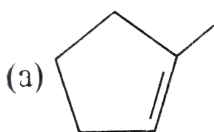
C. Methyl cyanide

D. Methyl iodide

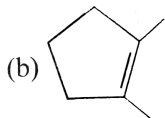
Answer: C

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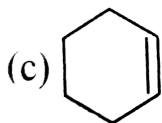
21. A hydrocarbon X on treatment with O_3 followed by the reduction of ozonide with $Zn - H_2O$ gives Y, Y gives both. Tollent test as well yellow precipitate with $NaOH / I_2$ solution. Which is a possible structure of X?



A.

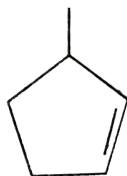


B.



C.

(d)



D.

Answer: A



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22. Acetophenone is prepared by the reaction of which of the following in the presence of $AlCl_3$ catalyst

- A. Phenol and acetic acid
- B. Benzene and acetone
- C. Benzene and acetyl chloride
- D. Phenol and acetone

Answer: C



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23. Hydrogenation of benzoyl chloride in the presence of Pd on $BaSO_4$ gives

- A. Benzyl alcohol
- B. Benzaldehyde
- C. Benzoic acid
- D. Phenol

Answer: B



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24. Ketones are prepared by

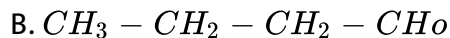
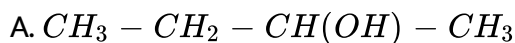
- A. Clemmensen's reduction
- B. Cannizzaro reaction
- C. Rosenmund's reduction
- D. Oppenauer's oxidation

Answer: D



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25. $CH_3 - CH_2 - C \equiv C \xrightarrow[H_2SO_4]{HgSO_4}$, the compound A is



D. None of these

Answer: A



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26. $R - CH = CH_2 + CO + H_2 \xrightarrow[HighPressure]{HighTemp} RCH_2CH_2CHO.$

A. Medius reaction

B. Oxo process

C. Sandorn's reaction

D. Stephen's reaction

Answer: B



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27. The reagent used in Gattermann -Koch aldehyde synthesis is

A. $Pd / BaSO_4$

B. alkaline $KMnO_4$

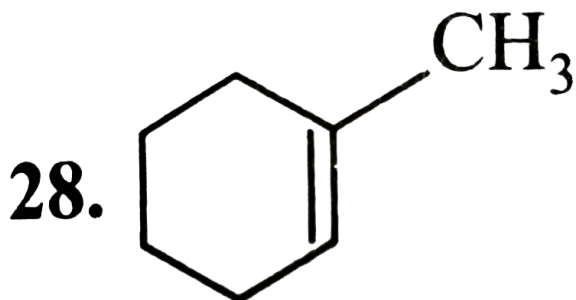
C. acidic $KMnO_4$

D. $CO + HCl$

Answer: D



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28.

On

reductive ozonolysis yields

- A. 2- oxoheptanal
- B. 6- oxoheptanoic acid
- C. 6- hydroxyheptanal
- D. 3- hydroxyheptanal

Answer: A



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29. An alkene of molecular formula C_9H_{18} on ozonolysis gives 2,2-dimethyl propanal and 2-butanone, then the alkene is

A. 2, 2, 4 - trimethyl - 3 - hexene

B. 2, 2, 6 - trimethyl - 3 - hexene

C. 2, 3, 4 - trimethyl - 2 - hexene

D. 2, 2, 4 - trimethyl - 2 - hexene

Answer: A



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30. Consider the following statement acetophenone can be prepared by

(1) Oxidation of 1-phenylthanol

(2) Reaction of benzaldehyde with methyl magnesium bromide

(3) Friedel-Crafts reaction of benzene with acetyl chloride

(4) Distillation of calcium benzoate

A. 1 and 2

B. 1 and 4

C. 1 and 3

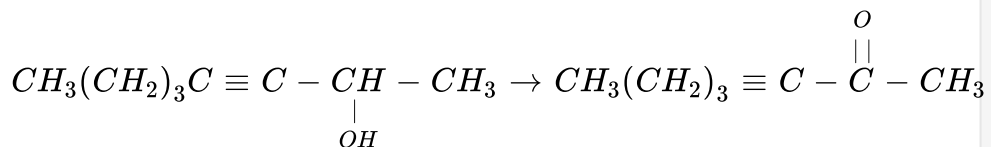
D. 3 and 4

Answer: C

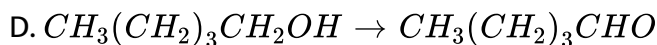
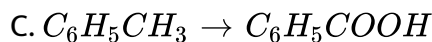
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31. Which of the following oxidation reaction can be carried out with chromic acid in aqueous acetone at $5 - 10(^\circ)C$?

A.



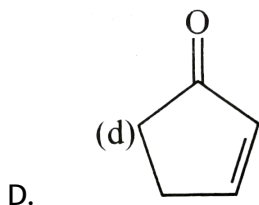
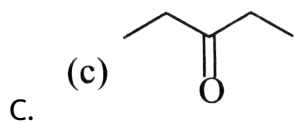
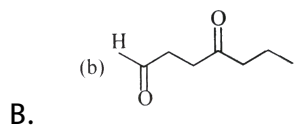
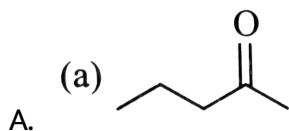
B.



Answer: B

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32. Which of the following on reaction with excess of $NaHSO_3$ in aqueous solution will give mixture of salts which can be separated into fraction by fractional crystallization?

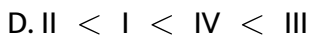
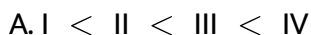
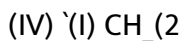
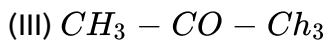


Answer: B



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33. Arrange the following in the increasing order of reactivity with NH_3



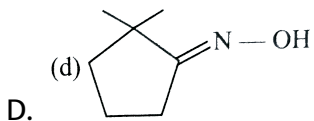
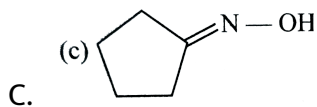
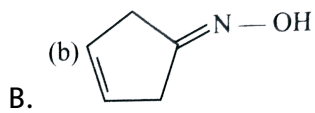
Answer: C



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34. Which oximes on treatment with concentrated HCl gives single amide?

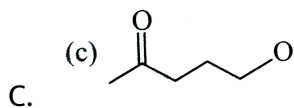
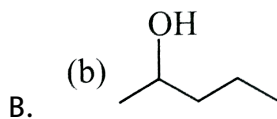
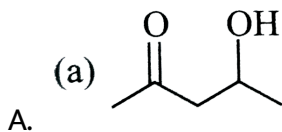


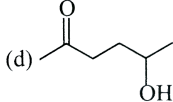


Answer: C

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35. Which one of the following will most readily be dehydrated in acidic condition?



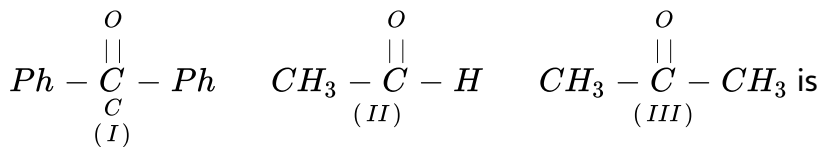


D.

Answer: A

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36. The correct order of reactivity of Ph Mg Br with



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

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

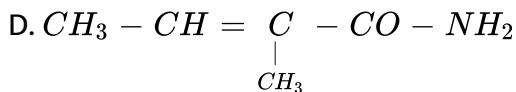
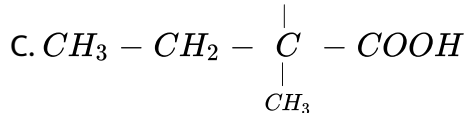
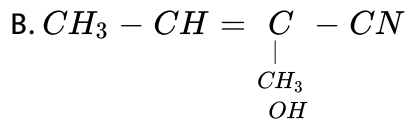
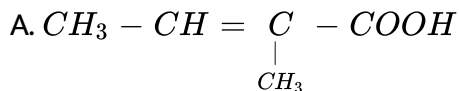
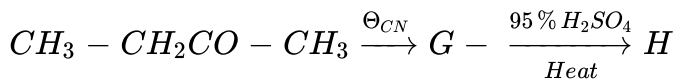
C. (II) > (III) > (I)

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

Answer: C

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37. The major product *H* of the given reaction sequence is

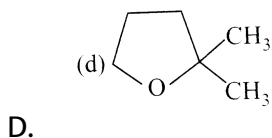
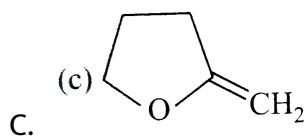
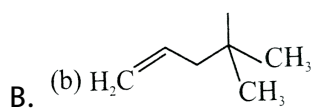
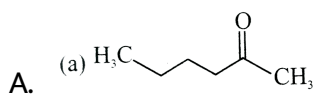
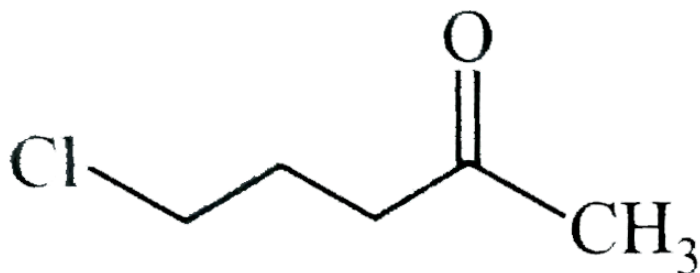


Answer: A



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38. The major product in the following reaction is

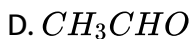
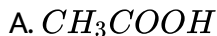
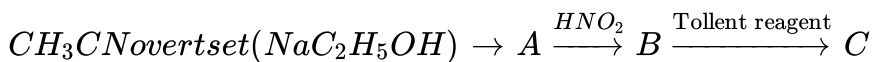


Answer: D



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39. Identify the produce C in the series

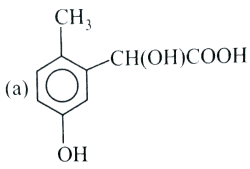


Answer: D

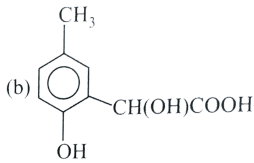


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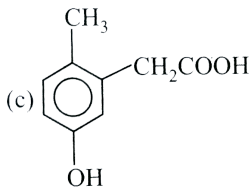
40. P- cresol react with chloroform in alkaline medium to give compound (A) which adds HCN to form (B). The latter on acidic hydrolysis given chiral carboxylic acid. The structure of carboxylic acid is :



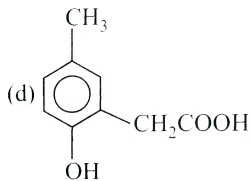
A.



B.



C.



D.

Answer: B



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41. From which of the following tertiary butyl alcohol is obtained by the action of methyl magnesium iodide

A. $HCHO$

B. CH_3CHO

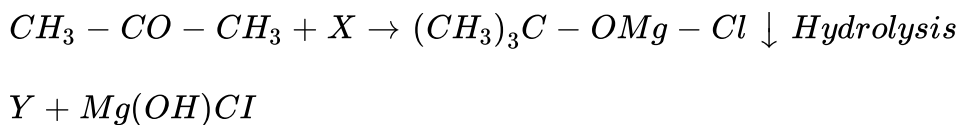
C. CH_3COCH_3

D. CO_2

Answer: C

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42. Identify the reactant X and the product Y



A. $X = MgCl_2; Y = CH_3CH = CH_2$

B. $X = C_2H_3MgCl; Y = CH_3COCH_3$

C. $X = CH_3MgCl; Y = (CH_3)_3C - OH$

D. $X = C_2H_3MgCl; Y = (CH_3)_3C - OH$

Answer: C

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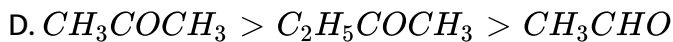
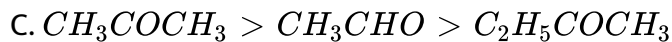
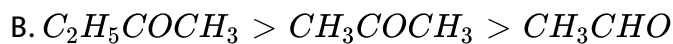
43. Acetaldehyde reacts with C_2H_3MgCl the final product is

- A. An aldehyde
- B. A ketone
- C. A primary alcohol
- D. A secondary alcohol

Answer: D

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44. Correct order of reactivity of CH_3CHO , $C_2H_3COCH_3$ and CH_3COCH_3 is



Answer: A

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45. Acetaldehyde and acetone differ in their reaction with

A. Sodium bisulphite

B. Ammonia

C. Phosphorus pentachloride

D. Phenyl hydrazine

Answer: B

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46. Aldehydes and ketones give addition reaction with

- A. Hydrazine
- B. Phenyl hydrazine
- C. Semicarbazide
- D. Hydrogen cyanide

Answer: D



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47. Acetaldehyde reacts with

- A. Electrophiles only
- B. Nucleophiles only
- C. Free radicals only

D. Both electrophiles and nucleophiles

Answer: B

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48. The addition of HCN to carbonyl compounds is an example of

A. Nucleophilic substitution

B. Electrophilic addition

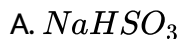
C. Neucleophilic addition

D. Electrophilic substitution

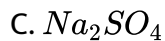
Answer: C

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49. Which of the following reagents is used to distinguish acetone and acetophenone?



B. Grignard reagent

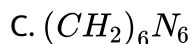
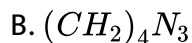
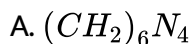


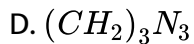
Answer: A



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50. Formaldehyde reacts with ammonia to give urotropine. The formula of urotropine is



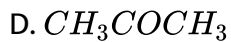
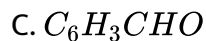
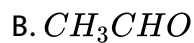


Answer: A



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51. Which gives lactic acid on hydrolysis after reacting with HCN ?

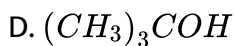
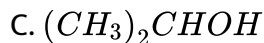
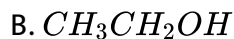
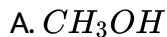
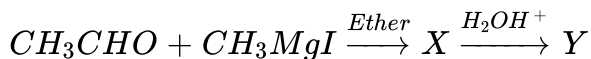


Answer: B



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52. Identify the produce Y in the sequence

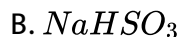


Answer: C



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53. The reagent that gives an orange coloured precipitate with acetaldehyde is



C. Iodine in presence of NaOH

D. 2, 4 - DNP

Answer: D

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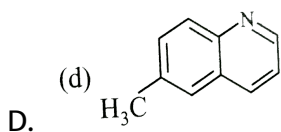
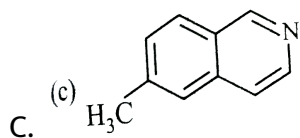
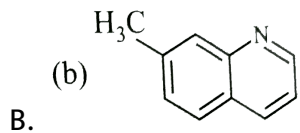
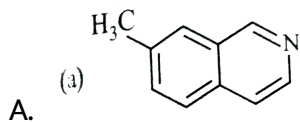
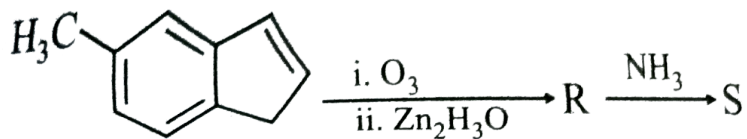
54. The reaction of an aldehyde with hydroxylamine gives a product which is called

- A. Aminohydroxide
- B. Hydrazone
- C. Semicarbazone
- D. Oxime

Answer: D

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1. In the following reaction, the product *S* is



Answer: A

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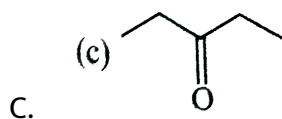
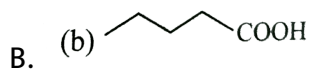
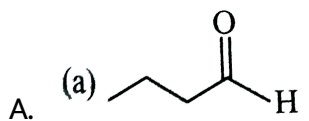
2. $\text{C}_2\text{H}_5\text{CHO}$ and $(\text{CH}_3)_2\text{CO}$ can be distinguished by testing with

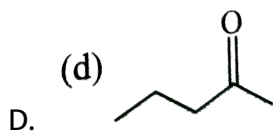
- A. Phenyl hydrazine
- B. Hydroxylamine
- C. Fehling solution
- D. Sodium bisulphite

Answer: C

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3. Which of the following will give a racemic mixture on reduction with NaBH_4 followed by acid work-up?





Answer: D

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4. The Clemmensen reduction of acetone yields

A. Ethanol

B. Ethanal

C. Propane

D. Propanol

Answer: C

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5. The compound that will not give iodoform on treatment with alkali and iodine is :

A. acetone

B. ethanol

C. diethyl ketone

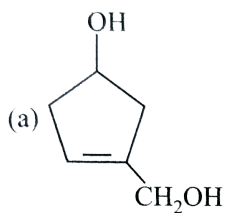
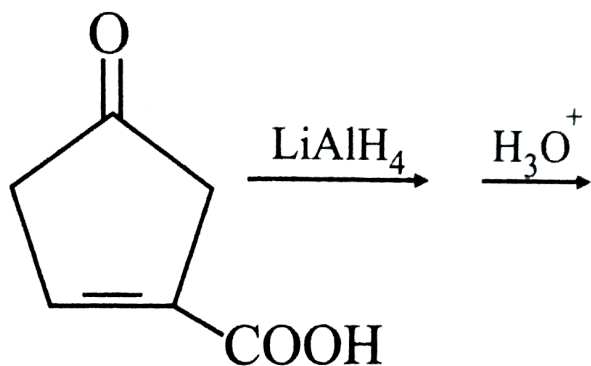
D. isopropyl alcohol

Answer: C

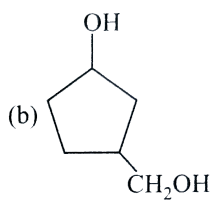


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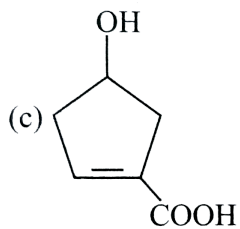
6. What would be the major product in the following reaction?



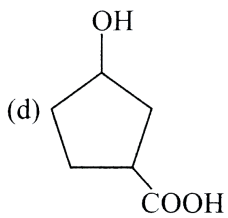
A.



B.



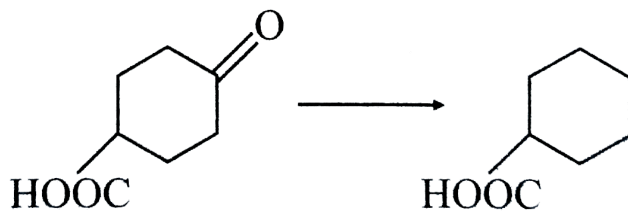
C.



Answer: A

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7. Which is the most suitable reagent for the following transformation ?



A. $LiAlH_4$

B. $N_2H_4 / NaOH / Heat$

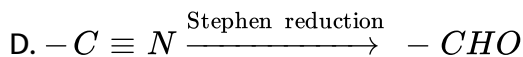
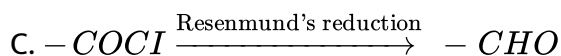
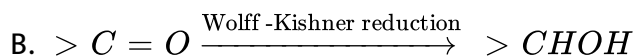
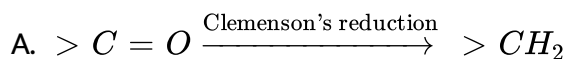
C. $Zn(Hg) - HCl$

D. $NaBH_4$

Answer: C

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8. Which one of the following pairs is not correctly matched ?

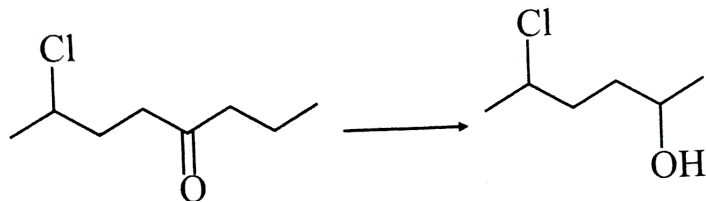


Answer: B

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9. The reagent which can best bring about the following transformation

is



A. $LiAlH_4$

B. $Al[CH_3)_2CHO]_3$

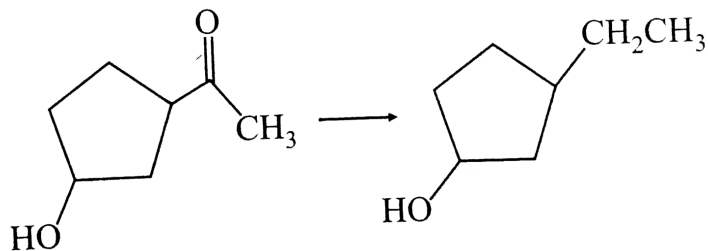
C. $Zn(Hg) - HCl$

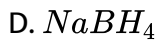
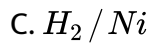
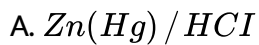
D. $NaBH_4$

Answer: B

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10. The appropriate reagent for the following transformation

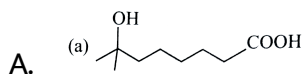
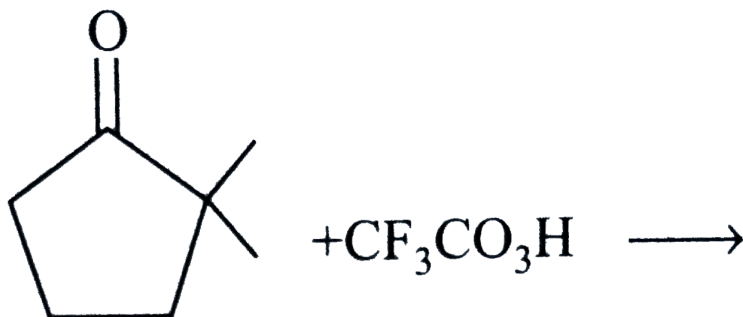


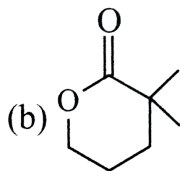


Answer: B

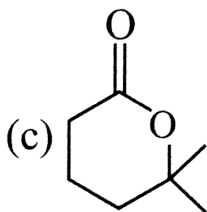
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11. What would be the major produce in the following oxidation reaction

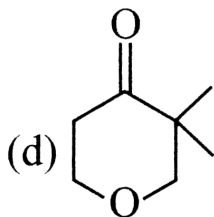




B.



C.

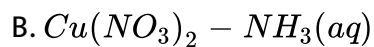


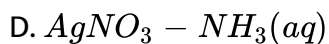
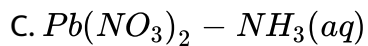
D.

Answer: C

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12. Tollens reagent used for the distinction of aldehydes with ketones is





Answer: D

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13. Which of the following organic compound exhibits positive Fehling test as well as iodoform test?

A. Methanal

B. Ethanol

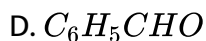
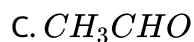
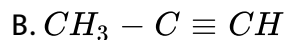
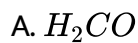
C. Propanone

D. Ethanal

Answer: D

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14. Which compound given below does not form red precipitate with ammoniacal solution of $Cu(II)$ tartarate?

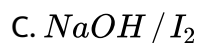
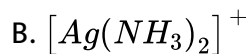
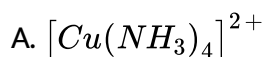


Answer: D



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15. Which reagent can differentiate between benzaldehyde and acetophenone by

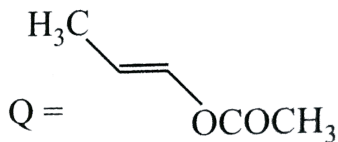
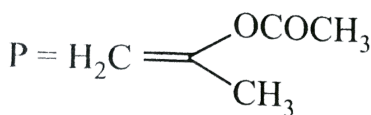


D. Both (b) and (c)

Answer: D

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16. The product of acid can difference of *P* and *Q* can be distinguished by



A. Lucas Reagent

B. 2, 4 – *DNP*

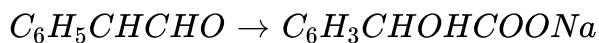
C. Fehling's solution

D. NaHSO_3

Answer: C

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17. The following reagent converts



- A. *Aq. NaOH*
- B. Acidic $Na_2S_2O_3$
- C. Na_2CrO_4 / H_2SO_4
- D. $NaNO_2 / HCl$

Answer: A



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18. To distinguish between formaldehyde and acetaldehyde, we require

- A. Tollens reagent
- B. Fehling's solution
- C. Schiff's reagent

D. Caustic soda solution

Answer: D

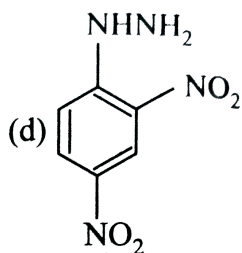
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19. Which reagent can be used to separate a mixture of ethanol and butanone into components?

A. $NaOH / I_2$

B. $[Ag(NH_3)_2]^+$

C. $[Cu(NH_3)_4]^{2+}$

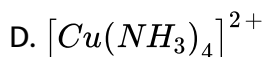
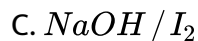
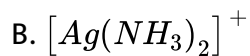
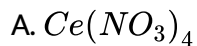


D.

Answer: D

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20. Reagent that can difference 2-propanol from acetone is



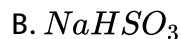
Answer: A



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21. Which reagent gives below can differentiate propanal from propanone?

A. 2, 4- dinitrophenyl hydrazine



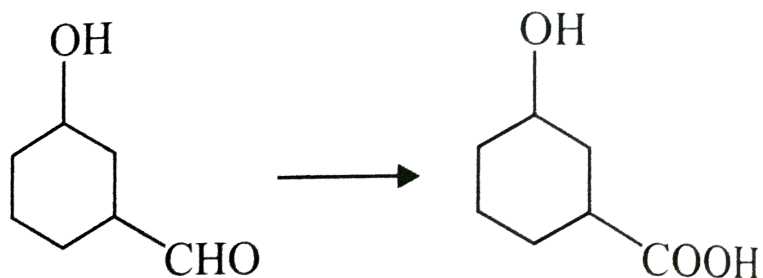
C. Schiff's reagent



Answer: C

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22. Which is the most suitable reagent for the reaction?



A. $AgNO_3 - NH_3(aq)$

B. $KMnO_4 - NaOH$

C. $KMnO_4 - H_2SO_4$

D. $CrO_3 - H_2SO_4$

Answer: A

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23. How will you convert butan -2-one to propanoic acid?

A. Tollens reagent

B. Fehling's solution

C. $NaOH / I_2 / H^+$

D. $NaOH / NaI / H^+$

Answer: C



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24. The reagent with which both acetaldehyde and acetone react easily is

A. Fehling's reagent

B. Grignard reagent

C. Schiff's reagent

D. Tollens reagent

Answer: B

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25. Which one of the following is reduced with zinc and hydrochloric acid to give the corresponding hydrocarbon?

- A. Butan-2-one
- B. Acetic acid
- C. Acetamide
- D. Ethyl acetate

Answer: A

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26. When acetaldehyde is heated with Fehling's solution it gives a precipitate of

A. Cu

B. CuO

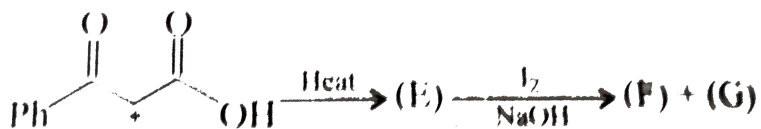
C. Cu_2O

D. $Cu + Cu_2O + CuO$

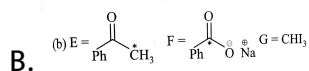
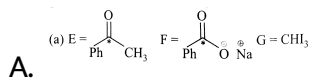
Answer: C

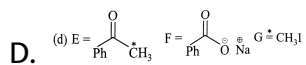
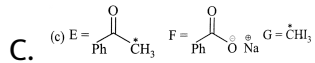
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27. In the following reaction sequence, the correct structures of (E), (F) and (G) are:



(*implies ^{13}C -labelled carbon)





Answer: C

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28. Which of the following will not give the iodoform test?

- A. Acetophenone
- B. Ethanal
- C. Benzophenone
- D. Ethanol

Answer: C

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29. Haloform test is given by the following substance

A. $HCHO$

B. $(CH_3)_2CO$

C. CH_3CHO

D. CH_3CH_2Cl

Answer: B and C



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30. Which of the following does not give yellow precipitate with

$NaOH + KI$?

A. Acetone

B. Acetaldehyde

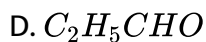
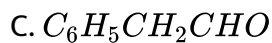
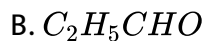
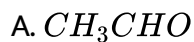
C. Benzaldehyde

D. Acetophenone

Answer: C

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31. The alkaline $CuSO_4$ containing sodium potassiumtartrate does not react with



Answer: C

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32. $CH_3CH = CHCHO$ is oxidised to $CH_3CH = CHCOOH$ using :

A. Alkaline $KMnO_4$

B. Selenium dioxide

C. Ammoniacal $AgNO_3$

D. All

Answer: C

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33. Which of the following does not turn Schiff's reagent to pink?

A. Formaldehyde

B. Benzaldehyde

C. Acetone

D. Acetaldehyde

Answer: C

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34. The final product formed when acetaldehyde is reduced with sodium and alcohol is

- A. Ethylene
- B. Ethyl alcohol
- C. Ethene
- D. All of these

Answer: B



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35. The compound obtained by the reduction of propiondehyde by amalgamated zinc and concentrated HCl is

- A. Propanol
- B. Propane

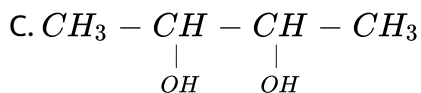
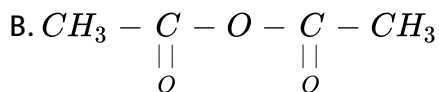
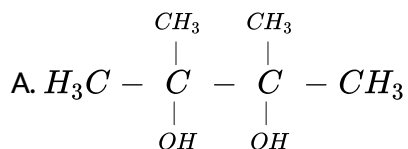
C. Propene

D. All of these

Answer: B

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36. $2\text{CH}_3 - \underset{\begin{array}{c} || \\ \text{O} \end{array}}{\text{C}} - \text{CH}_3 \xrightarrow[\text{H}^+]{\text{Mg/Hg}}$ Product in the reaction is



D. None of these

Answer: A

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37. Contents of three bottles were found to react

(i) Neither with Fehling's solution nor with Tollens reagent

(ii) Only with Tollens reagent but not with Fehling's solution

(iii) With both Tollens and Fehling's solution. If they contained either (acetadehyde) or propanone (acetone) or benzal (benzaldehyde), which bottle contained which

A. In (i) benzal, in (ii) ethanal and in (iii) propanone

B. In (i) benzal, in (ii) propanone and in (iii) ethanal

C. In (i) propanone, in (ii) benzal and in (iii) ethanal

D. In (i) propanone in (ii) ethanal and in (iii) benzal

Answer: C



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38. Which one of the following react HCN and Tollens reagent, but is not oxidised by Fehling's solution?

A. Methanal

B. Ethanal

C. Benzaldehyde

D. Acetone

Answer: C

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39. Which one of the following does not give brickred precipitate with Fehling solution?

A. Acetone

B. Acetaldehyde

C. Formalin

D. D-glucose

Answer: A

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40. Acetaldehyde and can be distinguished by

- A. Molisch test
- B. Bromoform test
- C. Solubility in water
- D. Tollens test

Answer: D

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41. Which one is used in the manufacture of mirror?

- A. Red lead (litharge)
- B. Ammoniacal $AgNO_3$
- C. Ammoniacal $AgNO_3$ + red lead

D. Ammoniacal $AgNO_3 + HCHO$

Answer: D

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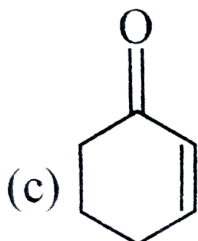
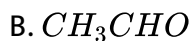
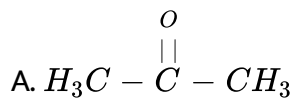
42. Which one of the following product is obtained by the oxidation of propinaldehyde?

- A. Acetic acid
- B. Formic acid and acetic acid
- C. Propanoic acid
- D. n-propyl alcohol

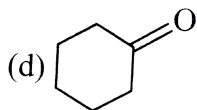
Answer: C

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43. Which one of the following would produce an orange coloured precipitate with 2, 4-dinitrophenyl hydrazine?



C.



D.

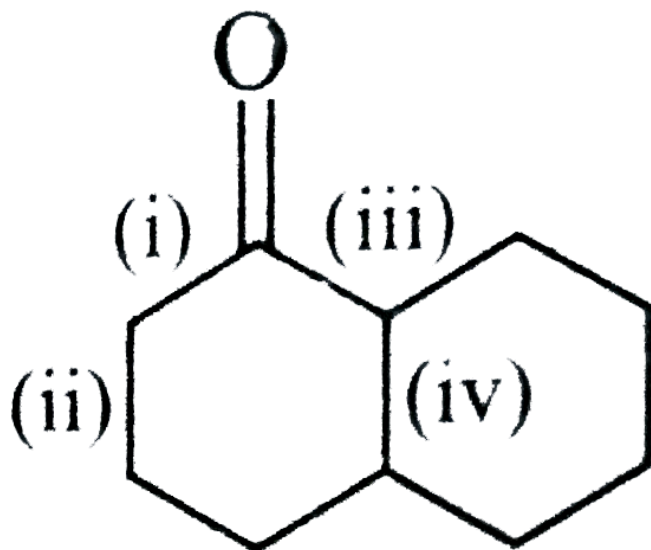
Answer: C



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44. Consider the following reaction

A "dicarbonyl" compound (NaOH (dilute)) reacts (Aldol) to form



Which of the labeled C - C bond formation is not possible in the above reaction?

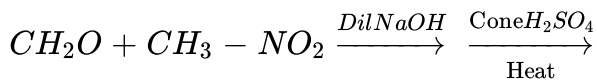
- A. Only iv
- B. Only iii
- C. Only ii
- D. Only i

Answer: D

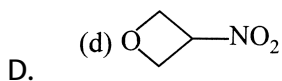
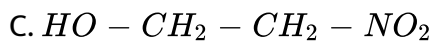
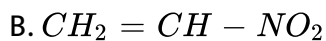
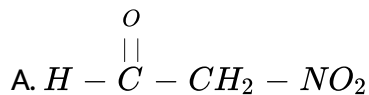


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45. In the following reaction



The major organic product is



Answer: B

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46. The incorrect statement regarding condensation is

A. The enolate is favoured at equilibrium

- B. It accomplishes the formation of a new $C - C$ bond
- C. The key step in the mechanism of base catalyzed reaction is attack of α -carbon of an enolate ion on the carbonyl carbon
- D. Dehydration of aldol gives α, β -unsaturated carbonyl compound

Answer: A

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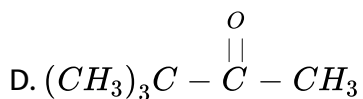
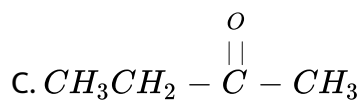
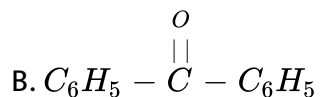
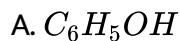
47. Which of the following could result as a product in the aldol condensation reaction?

- A. 4 - methyl - 5 - hexen - 2 - one
- B. 4 - methyl - 4 - penten - 2 - one
- C. 4 - methyl - 3 - penten - 2 - one
- D. 3 - methyl - 4 - hexen - 2 - one

Answer: C

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48. Which of the following gives aldol condensation reaction?

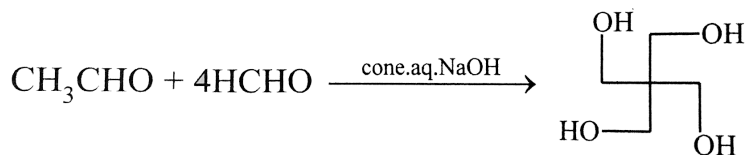


Answer: C

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49. The number of aldol reaction (s) that occurs in the given transformation is

$\text{CH}_3\text{CHO} + 4\text{HCHO} \xrightarrow{\text{cone. aq. NaOH}}$ to



A. 1

B. 2

C. 3

D. 4

Answer: C

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50. Aldol condensation will not be observed in

A. Chloral

B. Phenyl acetaldehyde

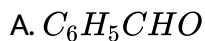
C. Hexanal

D. Ethanol

Answer: A

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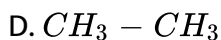
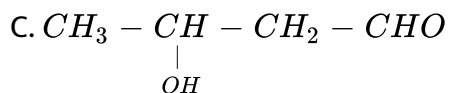
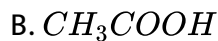
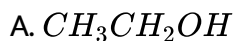
51. Which of the following compound will undergo self - aldol condensation in the presence of cold dilute alkali?



Answer: B

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52. Acetaldehyde when treated with dilute $NaOH$ gives.



Answer: C

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53. Treatment of propionaldehyde with dilute $NaOH$ solution gives



Answer: D

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54. Aldol condensation of acetaldehyde involves the formation of which of the following intermediate

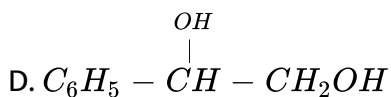
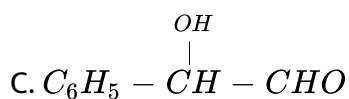
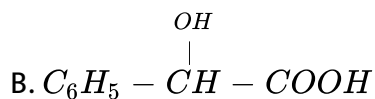
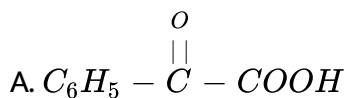
- A. Acetate ion
- B. A carbanion
- C. A carbonium ion
- D. A free radical

Answer: B

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Cannizaro'S Reaction

1. The major organic product in the following reaction is



Answer: B

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2. Which one of the following undergoes reaction with 50% sodium hydroxide solution to give the corresponding alcohol and acid?

A. Benzoic acid

B. Benzaldehyde

C. Butanal

D. Phenol

Answer: B

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3. The Cannizzaro reaction is not given by

A. Tri methyl acetaldehyde

B. Acetaldehyde

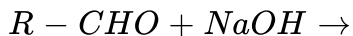
C. Benzaldehyde

D. Formaldehyde

Answer: B

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4. For a Cannizzaro reaction



Rate law is derived as : $Rate = k[RCHO]^2[HO]^{-2}$

from the above rate law, it can be concluded that

- A. hydride donor is a dianion
- B. reaction involved hydride ion transfer
- C. reaction does not show kinetic isotopic effect
- D. reaction is pseudo 2nd order

Answer: A



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5. Trichloroacetaldehyde was subjected to Cannizzaro's reaction by using $NaOH$. The mixture of the another compound. The other compound is

- A. 2, 2, 2- trichloroethanol

B. trichloromethanol

C. 2, 2, 2- trichloroproanol

D. chloroform

Answer: A

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6. m-Chlorobenzaldehyde on reaction with conc. KOH at room temperature gives:

A. potassium m - chlorobenzoate and m - hydroxybenzal - dehyde.

B. m - hydroxybenzaldehyde and m - chlorobenzyl alcohol

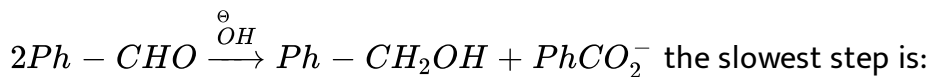
C. m - chlorobenzyl alcohol and m - hydroxybenzyl alcohol

D. potassium m - chlorobenzoate and m - chlorobenzyl alcohol.

Answer: D

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7. In the Cannizzaro reaction given below:

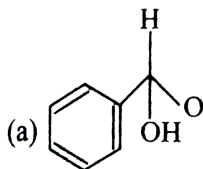


- A. the attack of $\ominus\text{OH}$ at the carbonyl group.
- B. the transfer of hydride to the carbonyl group.
- C. the abstraction of proton from the carboxylic acid.
- D. the deprotonation of PhCH_2OH .

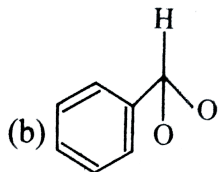
Answer: B

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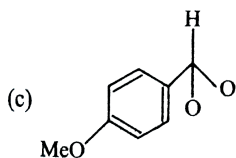
8. In a Cannizzaro reaction the intermediate that will be the best hydride donor is



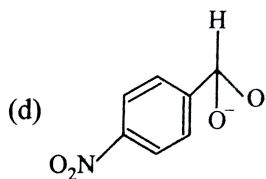
A.



B.



C.

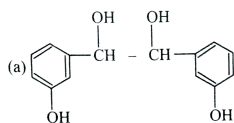


D.

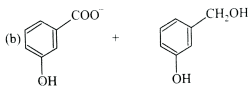
Answer: D

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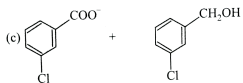
9. Which m-pchlorobenzaldehyde is treated with 50 % *KOH* solution, the product (s) obtained is (are)



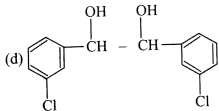
A.



B.



C.



D.

Answer: C



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10. A mixture of benzaldehyde and formaldehyde on heating with aqueous NaOH solution gives:

A. Benzyl alcohol and sodium formate

B. sodium benzoate and methyl alcohol

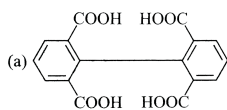
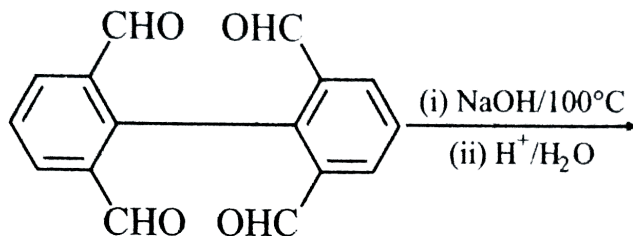
C. sodium benzoate and sodium formate

D. benzy alcohol and methyl alcohol

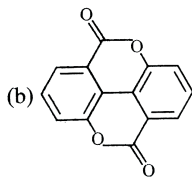
Answer: A

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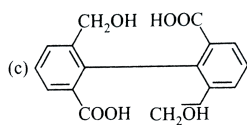
11. Complete the following reaction



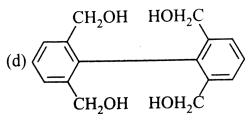
A.



B.



C.



D.

Answer: C

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12. Benzaldehyde + $NaOH \rightarrow$

- A. Benzyl alcohol
- B. Benzoic alcohol
- C. Hydrobenzamide
- D. Cinnamic acid

Answer: A

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13. Benzyl alcohol and sodium benzoate is obtained by the action of sodium hydroxide on benzaldehyde. This reaction is known as

- A. Perkin's reaction
- B. Cannizzaro's reaction
- C. Sandmeyer's reaction
- D. Claisen condensation

Answer: B



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14. If formaldehyde and KOH are heated, then we get

- A. Acetylene
- B. Methane
- C. Methyl alcohol
- D. Ethyl formate

Answer: C

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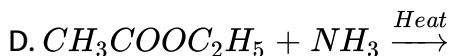
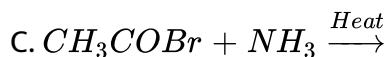
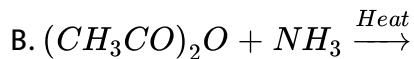
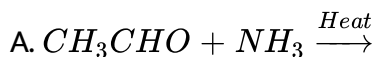
15. What is the name of reaction when benzaldehyde changes into benzyl alcohol?

- A. Friedel - Crafts reaction
- B. Kolbe's reaction
- C. Wurtz reaction
- D. Cannizzaro reaction

Answer: D

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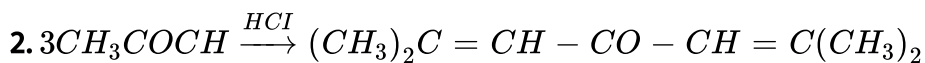
1. Which of the following reactions does give ethanamide?



Answer: A



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(B)

This polymer (B) is obtained gas. B can be

A. Phorone

B. Formose

C. Diacetone alcohol

D. Mesityl oxide

Answer: A

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3. In which of the of the following reaction aromatic aldehyde is treated with acid anhydride in prence of corresponding salt of the acid to give unsaturated aromtic acid

A. Friedel - Crafts reaction

B. Perkin reaction

C. Wurtz reaction

D. None of these

Answer: B

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4. The reaction in the which sodium cyanide is used

- A. Perkin's reaction
- B. Reimer -Tiemann reaction
- C. Benzoin condensation
- D. Rosenmund reaction

Answer: C



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5. Bakelite is a polymer of

- A. HCHO + phenol
- B. HCHO + aldehyde (acetaldehyde)
- C. Phenol + H_2SO_4
- D. HCHO + acetone

Answer: A

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6. The reaction

$C_6H_5CHO + CH_3CHO \rightarrow C_6H_5CH = CH - CHO$ is known as

- A. Parkin's reaction
- B. Claisen Schmidt condensation
- C. Banzoin condensation
- D. Cannizzaro reaction

Answer: B

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7. Benzaldehyde on reaction with acetophenone in the presence of sodium sodium hydroxide sodium gives

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8. An important reaction of acetone is autocondensation in presence of concentrated sulphuric acid to give the aromatic compound

A. Mesitylene

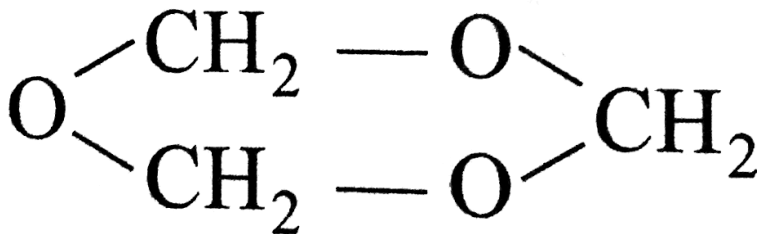
B. Mesityl oxide

C. Trioxane

D. Phorone

Answer: A

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9.

The above shown polymer is obtained when a carbon compound is allowed to stand. It is a white solid. The polymer is

- A. Trioxane
- B. Formose
- C. Paraformaldehyde
- D. Metaldehyde

Answer: A



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10. The product of the reaction between ammonia and formaldehyde is

- A. Urotropine
- B. formamide
- C. Paraformaldehyde
- D. Methanol

Answer: A

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11. When acetdehyde reacts with PCl_5 the resulting compound is

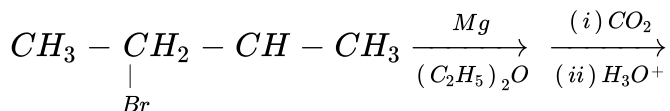
- A. Ethyl chloride
- B. Ethylene chloride
- C. Ethylidene chloride
- D. Trichloro acetaldehyde

Answer: C

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Carboxylic Acid

1. What is the correct about the following reaction



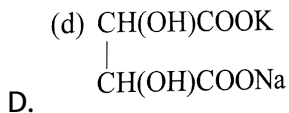
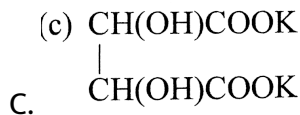
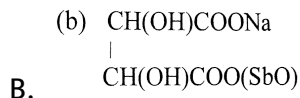
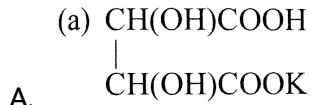
- A. The major product is racemic mixture of 2-methyl butanoic acid
- B. The major product is achiral 2-methyl butanoic acid
- C. If a pure enantiomer of starting compound is taken, the major product would be a pure enantiomer of 2-methyl butanoic acid
- D. The major product would be trans-2-butene

Answer: A



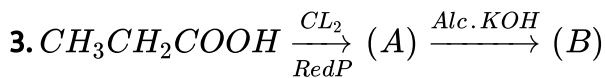
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2. Which of the following is the formula of tartarementic?

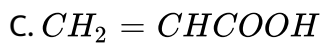


Answer: C

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What is (B)?



D. $ClCHCH_2COOH$

Answer: C

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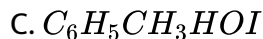
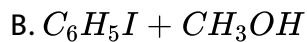
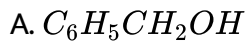
4. Vinegar obtained from canesugar contains

- A. Citric acid
- B. Lactic acid
- C. Acetic acid
- D. Palmitic acid

Answer: C

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5. The organic product formed in the reaction $C_6H_5COOH \xrightarrow[(II) H_3O^+]{(I) LiAlH_4}$



Answer: A

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6. When formic acid reacts with PCI_5 it forms

A. Formyl chloride

B. Acetyl chloride

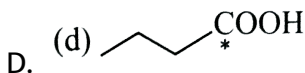
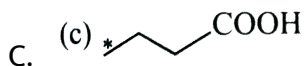
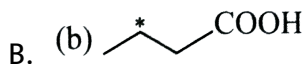
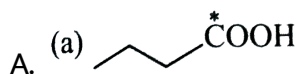
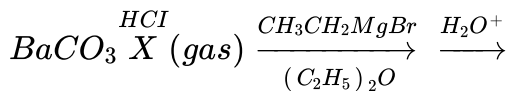
C. Methyl chloride

D. Propionyl chloride

Answer: A

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7. Product the major organic product in the following reaction.



Answer: A



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8. Which of the following acids is isomeric with phthalic acid?

A. Succinic acid

B. Salicylic acid

C. 1, 4-benzene dicarboxylic acid

D. Methyl benzoic acid

Answer: C

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9. Consider the acidity of the carboxylic acids:

(1) $PhCOOH$ (2) $o - NO_2C_6H_4COOH$

(3) $p - NO_2C_6H_4COOH$ (4) $m - NO_2C_6H_4COOH$

Which of the following order is correct?

A. $2 > 3 > 4 > 1$

B. $2 > 4 > 3 > 1$

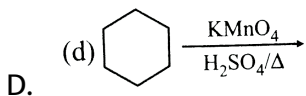
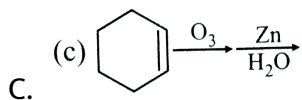
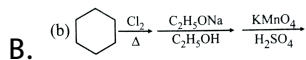
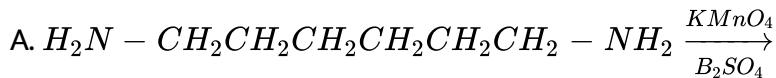
C. $2 > 4 > 1 > 3$

D. $1 > 2 > 3 > 4$

Answer: A

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10. Which reaction given below gives hehanedioic acid in good yield?

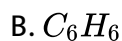


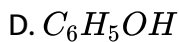
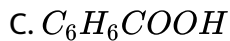
Answer: B



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11. Cabolic acid is

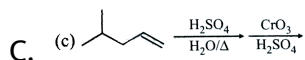
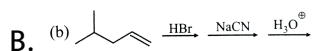
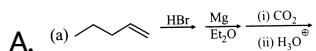




Answer: D

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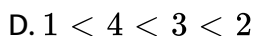
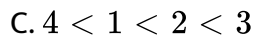
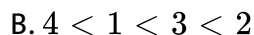
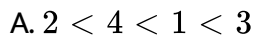
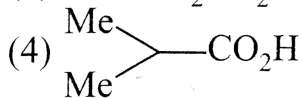
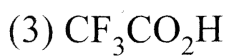
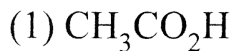
12. Which reaction sequence gives below 5-methyl hexanoic acid?



Answer: D

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13. The correct order of increasing acid strength of the compounds:



Answer: C

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14. Glacial acetic is obtained by

A. Distilling vinegar

B. Crystallizing, separating and melting acetic acid

C. Treating vinegar with dehydrating agent

D. Chemically separating acetic acid

Answer: B

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15. When propionic acid is treated with aqueous sodium bicarbonate, CO_2 is liberated. The C of CO_2 comes from :

A. Methyl group

B. Carboxylic acid group

C. Methylene group

D. Bicarbonate

Answer: D

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16. An enantiomerically pure acid is treated with racemic mixture of an alcohol having one chiral carbon. The ester formed will be :

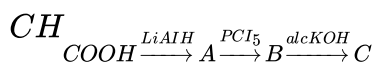
- A. Optically active mixture
- B. Pure enantiomer
- C. Meso compound
- D. Racemic mixture

Answer: A



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17. In the reaction



- A. acetaldehyde
- B. acetylene
- C. ethylene

D. acetylchloride

Answer: C

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18. The vapour of a carboxylic acid HA when passed over MnO_2 yields propanone. The acid HA is

A. Methanoic acid

B. Ethanoic acid

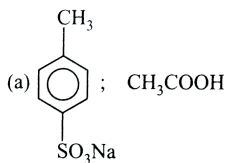
C. Propanoic acid

D. Butanoic acid

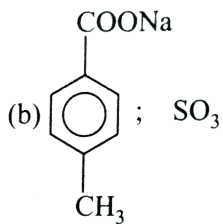
Answer: B

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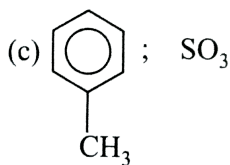
19. 4-Methylbenzenesulphonic acid with sodium acetate to give



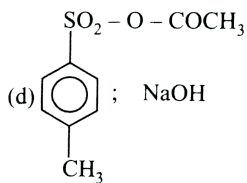
A.



B.



C.



D.

Answer: A

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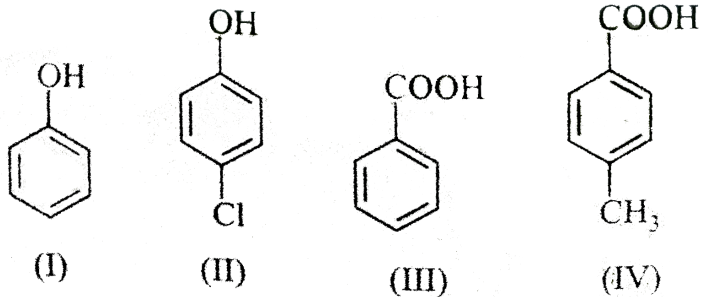
20. The acid which reduces Fehling solution is

- A. Methanoic acid
- B. Ethanoic acid
- C. Butanoic acid
- D. Propanoic acid

Answer: D

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21. The correct acidity order of the following is



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

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

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

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

Answer: A

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22. Sulphonation of benzoic acid produces mainly

A. o-sulphobenzoic acid

B. m-sulphobenzoic acid

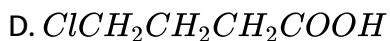
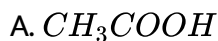
C. p-sulphobenzoic acid

D. o- and p-sulphobenzoic acid

Answer: B

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23. The strongest acid amongst the following compound is

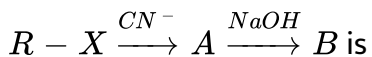


Answer: B



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24. The end product B in the sequence of reaction



A. An alkane

B. A carboxylic acid

C. Sodium salt of carboxylic acid

D. A ketone

Answer: C

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25. Among the following compound , the most acidic is

- A. p-nitrophenol
- B. p-hydroxybenzoic acid
- C. o-hydroxybenzoic acid
- D. p-toluic acid

Answer: C

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26. The carboxyl functional group ($-COOH$) is present in :

- A. picric acid

B. barbituric acid

C. ascorbic acid

D. aspirin

Answer: C

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27. A liquid was mixed with ethanol and a drop of concentrated H_2SO_4 was added. A compound with a fruity smell was formed. The liquid was

A. CH_3OH

B. $HCHO$

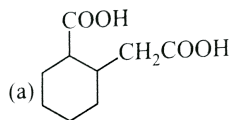
C. CH_3COCH_3

D. CH_3COOH

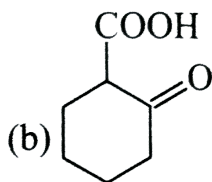
Answer: D

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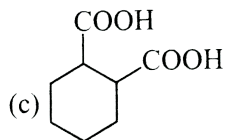
28. The compound that undergoes decarboxylation most readily under mild condition is



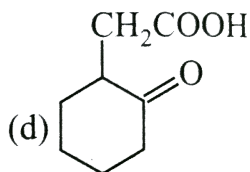
A.



B.



C.



D.

Answer: B



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29. The compound that does *NOT* liberate CO_2 , on treatment with aqueous sodium bicarbonate is

- A. Benzoic acid
- B. Benzene sulphonic acid
- C. Salicylic acid
- D. Carboic acid (phenol)

Answer: B



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30. A spirin is known as

- A. acetyl salicylic acid
- B. phenyl salicylate
- C. acetyl salicylate
- D. methyl salicylic acid

Answer: A

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31. Benzoic acid has higher molecular weight in benzene and less in water because

- A. Water has lower freezing point and higher boiling point than benzene
- B. It dissociates to a greater extent in benzene than in water
- C. It associates in water and dissociates in benzene
- D. It dissociates in water and associates in benzene

Answer: D

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32. What is the main for the fact that carboxylic acids can undergo ionization?

- A. Absence of α - hydrogen
- B. Resonance stabilisation of the carboxylate ion
- C. High reactivity of α - hydrogen
- D. Hydrogen bonding

Answer: D



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33. What of the following is expected to be most highly ionised in water ?

- A. $CH_2ClCH_2CH_2COOH$
- B. $CH_3CHClCH_2COOH$
- C. $CH_3CH_2CCl_2COOH$
- D. $CH_3CH_2CHClCOOH$

Answer: B

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34. Reduction of carboxylic acids gives

A. Alcohol with hydrogen in presence of palladium

B. Alcohol with $LiAlH_4$

C. Aldehyde with $LiAlH_4$

D. Alcohol with $2HI$ in presence of P

Answer: C

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35. $HCOOH$ shown all tests of aldehyde because

A. It has one aldehyde group

- B. It is a member of aldehyde
- C. All acids shows tests of aldehyde
- D. Does not shows any test

Answer: B

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36. Which one of the following orders of acid strength is correct?

- A. $RCOOH > HC \equiv CH > HOH > ROH$
- B. $RCOOH > ROH > HC \equiv CH > HOH$
- C. $RCOOH > HOH > ROH > HC \equiv CH$
- D. $RCOOH > HOH > HC \equiv CH > ROH$

Answer: C

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37. The reagent that can be used to distinguish between methanoic acid and ethanoic acid is

- A. Ammoniacal silver nitrate solution
- B. Neutral ferric chloride solution
- C. Sodium carbonate solution
- D. Phenolphthalein

Answer: C



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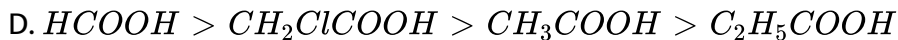
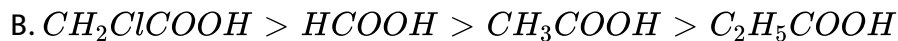
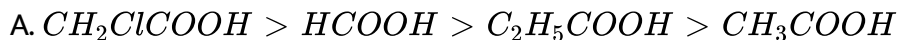
38. hydrolysis of an ester given acid A and alcohol B gives A. The ester is

- A. Methyl formate
- B. Ethyl formate
- C. Methyl acetate
- D. Ethyl acetate

Answer: A

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39. Right order of acidic strength is



Answer: A

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40. Lactic acid on oxidation by alkaline potassium permanganate gives

A. Tartaric acid

B. Pyruvic acid

C. Cinnamic acid

D. Propionic acid

Answer: B

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41. The reaction



A. Hell-Volhard-Zelinsky reaction

B. Birch reaction

C. Resenmund reaction

D. Hunsdiecker reaction

Answer: A

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42. Nitration of benzoic acid gives

- A. 3 – nitrobenzoic acid
- B. 2 – nitrobenzoic acid
- C. 2, 3 – dinitrobenzoic acid
- D. 2, 4 – dinitrobenzoic acid

Answer: A



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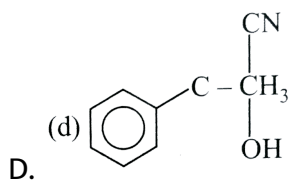
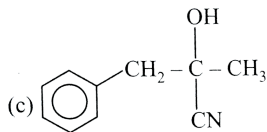
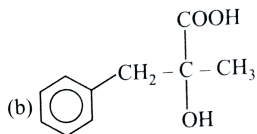
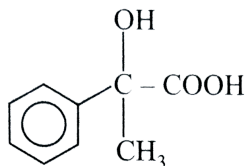
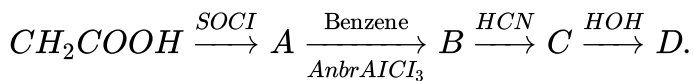
43. Lactc acid molecule has

- A. One chiral carbon atom
- B. Two chiral carbon atoms
- C. no chiral carbon atoms
- D. Asymmetric molecule

Answer: A

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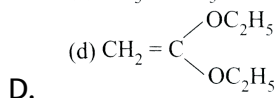
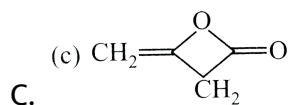
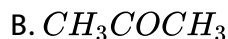
44. In a set of reactions acid yielded a product *D*



Answer: A

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45. $CH_3CO_2C_2H_5$ on reaction with sodium ethoxide in ethanol gives A , which on heating in the presence of acid gives B compound B is



Answer: A

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46. X is heated with soda lime and gives ethoxide. X is

- A. Ethanoic acid
- B. Methanoic acid
- C. Propanoic acid
- D. Either (a) or (c)

Answer: C

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47. Which of the following compound will react with $NaHCO_3$ solution salt and carbon dioxide?

- A. Acetic acid
- B. n-hexanol
- C. Phenol
- D. Both (a) and (c)

Answer: A

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48. What makes a lemon sour

- A. Tartaric acid
- B. Oxalic acid
- C. Citric acid
- D. Hydrochloric acid

Answer: C

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49. Hydrogenation of $C_3H_5CHOH - COOH$ over $Rh - Al_2O_3$ catalyst in methanol gives

- A. $C_6H_5CH_2COOH$
- B. $C_6H_{11}CHOHCOOH$



Answer: B

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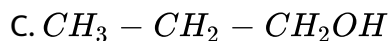
50. In the anion $HCOO^-$, the carbon-oxygen bonds are found to be of equal length. This is due to :

- A. Electronic orbitals of carbon atom are hybridised
- B. The $C = O$ bond is weaker than the $C - O$ bond
- C. The anion $HCOO$ has two resonating structures.
- D. The anion is obtained by removal of a proton from the acid molecule

Answer: C

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51. When $CH_2 = CHCOOH$ is reduced with $LiAlH_4$, the compound obtained is



Answer: B

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52. Cobaxylic acids are more acidic than phenol and alcohol beacouse of

A. Intermolecular hydrogen bonding

B. Formation of dimeters

C. Highly acidic hydrogen

D. Resonance stabilization of their conjugate base

Answer: D

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53. $R - CH_2 - CH_2OH$ can be converted into RCH_2CH_2COOH . The correct sequence of the reagents is

A. PBr_3, KCN, H_3O^+

B. PBr_3, KCN, H_2

C. HCN, PBr_3, H^+

D. HCN, H^+

Answer: A

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54. When propionic acid is treated with aqueous sodium bicarbonate, CO_2 is liberated. The C of CO_2 comes from :

- A. Methyl group
- B. Carboxylic acid group
- C. Methylene group
- D. Bicarbonate group

Answer: D

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55. Identify the correct order of boiling points of the following compounds: $CH_3CH_2CH_2CH_2OH$, $CH_3CH_2CH_2CHO$

$CH_3CH_2CH_2COOH$

A. 1 > 2 > 3

B. 3 > 1 > 2

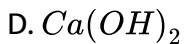
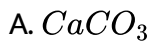
C. $1 > 3 > 2$

D. $3 > 2 > 1$

Answer: B

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56. The compound not soluble in acetic acid is



Answer: C

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57. The ortho /para directing group among the following is

A. COOH

B. CN

C. COCH_3

D. NHCOCH_3

Answer: D



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58. Iodoform test is not given by

A. Acetone

B. Ethyl alcohol

C. Acetic acid

D. None of these

Answer: C

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59. Which of the acids cannot be prepared by Grignard reagent?

- A. Acetic acid
- B. Succinic acid
- C. Formic acid
- D. All of these

Answer: C

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Derivatives Of Carboxylic Acid

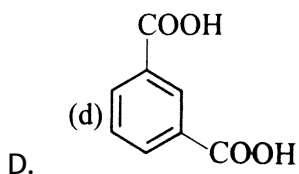
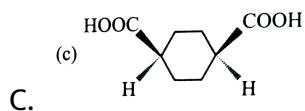
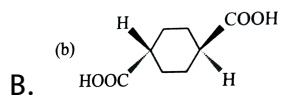
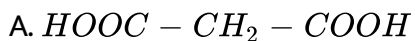
1. Which one is used as a food preservative?

- A. Sodium acetate
- B. Sodium propionate
- C. Sodium benzoate
- D. Sodium oxalate

Answer: C

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2. Which of the following gives a cyclic anhydride on heating?



Answer: C

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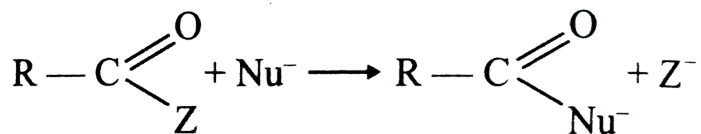
3. What compound is known as oil winter green?

- A. Phenyl benzoate
- B. Phenyl salicylate
- C. Phenyl acetate
- D. Methyl salicylate

Answer: D

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4. Rate of the reaction.



is fastest when Z is

A. OCOCH_3

B. NH_2

C. OC_2H_5

D. Cl

Answer: D

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5. Acetic chloride cannot be obtained by treated acetic acid with

A. CHCl_3

B. $SOCl_2$

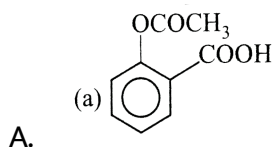
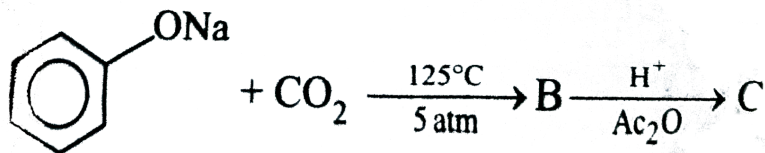
C. PCl_3

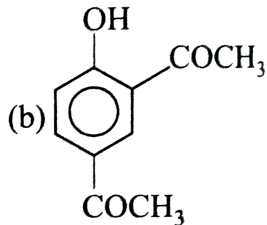
D. PCl_5

Answer: A

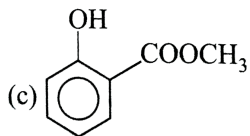
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6. Sodium phenoxide when heated with CO_2 under pressure at $125^\circ C$ yield a product which on acetylation product C

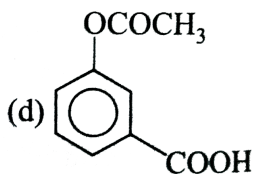




B.



C.

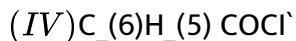
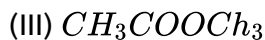
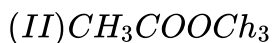
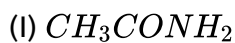


D.

Answer: A

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7. Which of the increasing order of reactivity of the following towards base catalysed hydrolysis reaction?



A. I < III < II < IV

B. IV < III < II < I

C. I < II < III < IV

D. I < IV < II < III

Answer: C

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8. Acetic anhydride is obtained from acetyl chloride by the reaction of

A. P_2O_5

B. H_2SO_4

C. CH_3COONa

D. CH_3COOH

Answer: C

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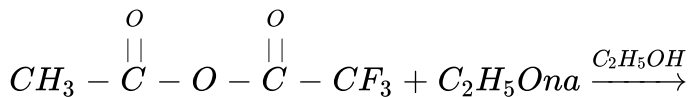
9. hydrolysis of acetamide formed produces

- A. Acetic acid
- B. Acetaldehyde
- C. Methylamine
- D. Formic acid

Answer: A

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10. What is the major product formed in the reaction?



- A. $CH_3COOC_2H_5$
- B. $CF_3COOC_2H_5$
- C. Both (a) and (b) are formed in comparable amount

D. Neither (a) nor (b) is formed as the major product

Answer: A

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11. Sodium ethoxide has reacted with ethanoyl chloride. The compound that is produced in the above reaction is

A. diethyl ether

B. 2-butanone

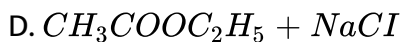
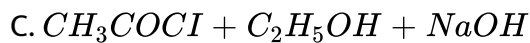
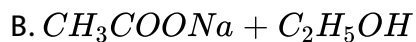
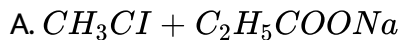
C. ethyl chloride

D. ethyl ethanoate

Answer: D

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12. On mixing ethyl acetate with aqueous sodium chloride, the composition of the resultant solution is



Answer: D



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13. Ethyl acetate is obtained when methyl magnesium iodide reacts with

A. Ethyl formate

B. Ethyl chloroformate

C. Acetyl chloride

D. Carbon dioxide

Answer: B

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14. Sodium acetate reacts with acetyl chloride to form

- A. Acetic acid
- B. Acetone
- C. Acetic anhydride
- D. Sodium formate

Answer: C

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15. Ammonium acetate reacts with acetic acid at $110^{\circ}C$ to form

- A. Acetamide

B. Formamide

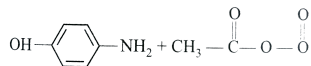
C. Ammonium cyanate

D. Urea

Answer: A

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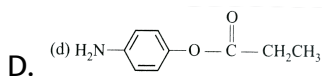
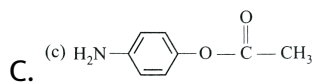
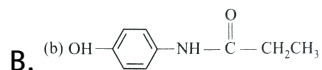
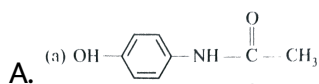
16. Consider the following reaction.



-O-overset(O)overset(||)(O)-

CH₂CH₃overset(Delta)to`

The major product (along with an acid) is



Answer: A

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17. Which of the following compound is resistant to nucleophilic attack by hydroxyl ions?

- A. Methyl acetate
- B. Acetonitrile
- C. Dimethyl ether
- D. Acetamide

Answer: C

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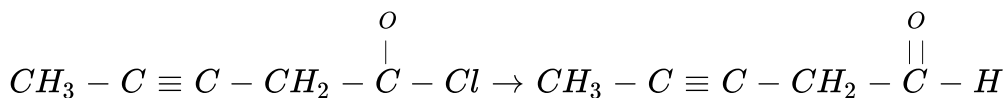
18. When an acyl chloride is heated with *Na* salt of a carboxylic acid, the product is

- A. An ester
- B. An anhydride
- C. An alkene
- D. An aldehyde

Answer: B

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19. Which is the best reagent for the following transformation?



- A. $Li[CH_3]_3AlH / 78^\circ C$
- B. $Pd / BaSO_4 / H_2$
- C. $LiAlH_4$ then $CrO_3 - H_2SO_4$
- D. $NaBH_4$ then $CrO_3 - H_2SO_4$

Answer: A



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20. The reaction of acetamide with water is an example of

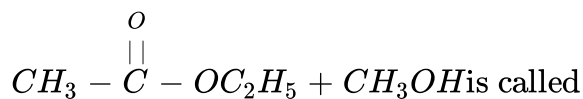
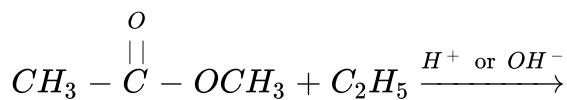
- A. Alcoholysis
- B. Hydrolysis
- C. Ammonolysis
- D. Saponification

Answer: B



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21. The reaction.



- A. Perkin's reaction
- B. Claisen-Schmidt reaction
- C. Esterification
- D. Trans-esterification

Answer: D

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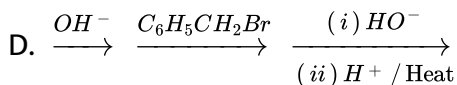
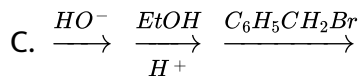
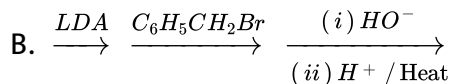
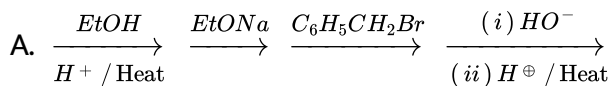
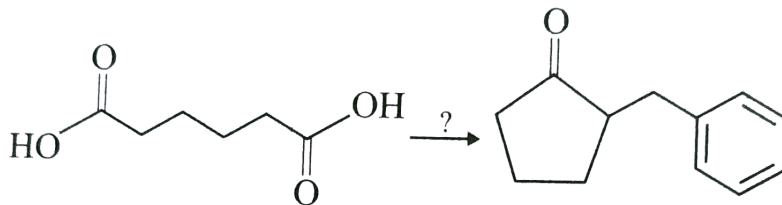
22. Acetic anhydride reacts with excess of ammonia to form

- A. $2CH_3COONH_4$
- B. $2CH_3CONH_3$
- C. $CH_3CONH_2 + CH_3COONH_4$
- D. $2CH_3COOH$

Answer: C

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23. Choose the best method that could performed the following transformation.

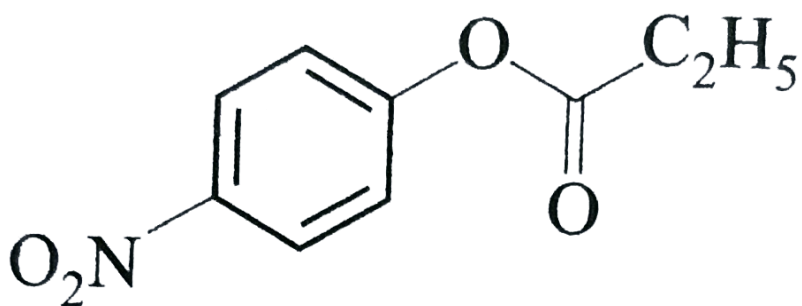
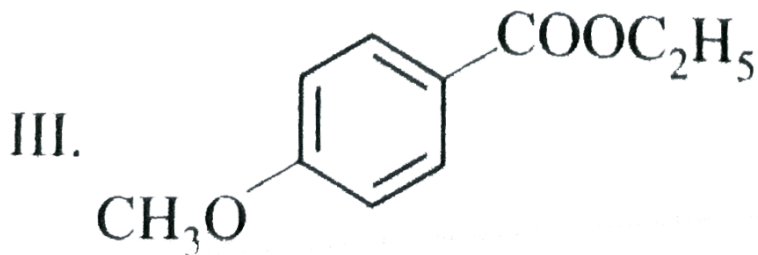
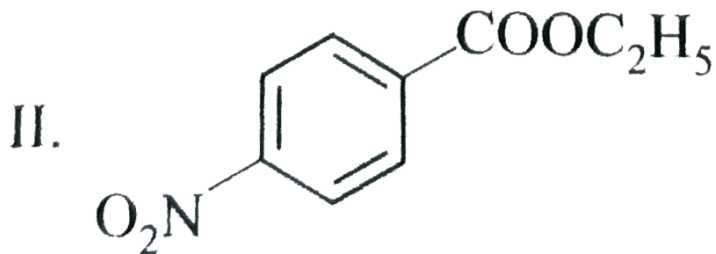
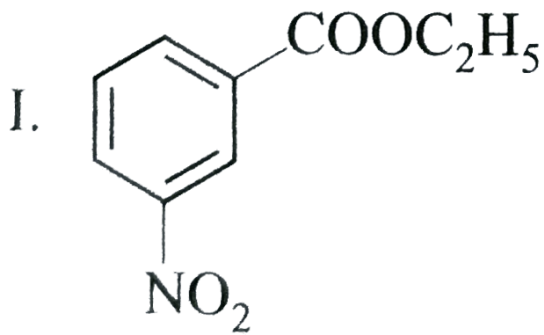


Answer: A



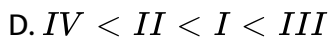
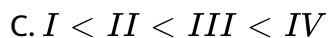
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24. Arrange the following esters in the following order of reactivity in base catalysed hydrolysis reaction.



A. $III < I < II < IV$

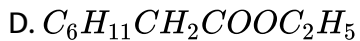
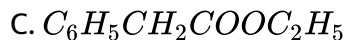
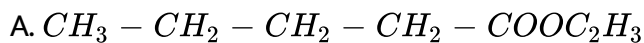
B. $Iv < III < II < I$



Answer: A

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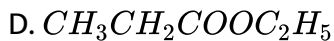
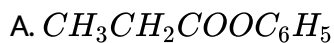
25. Which of the following esters cannot undergo Claisen self-condensation



Answer: B

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26. Which ester given below can most easily be produced by acid catalysed esterification (Fischer's esterification)?

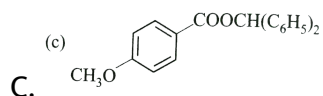
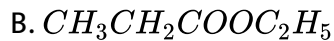
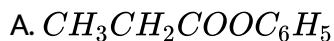


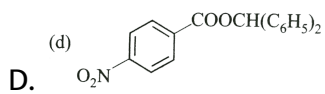
Answer: D



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27. Which of the following ester is most likely to undergo unimolecular acid catalysed hydrolysis reaction?

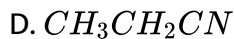
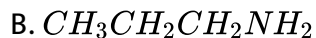
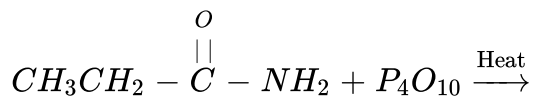




Answer: C

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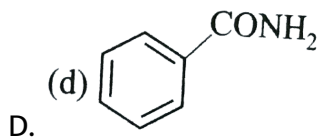
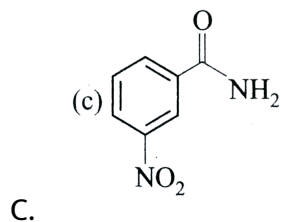
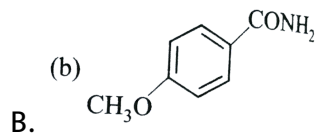
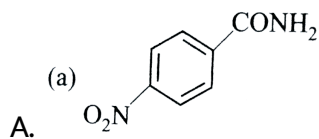
28. What is formed as the major organic product in the reaction?



Answer: D

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29. Which is most reactive in base catalysed hydrolysis reaction?

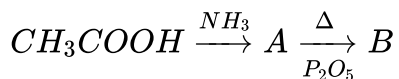


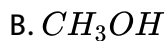
Answer: A



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30. Name the end product in the following series of reaction





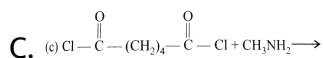
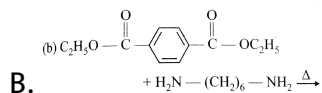
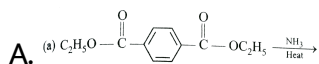
C. Acetonitrile

D. Ammonium acetate

Answer: C

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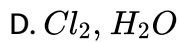
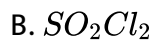
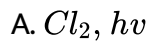
31. Which reaction given a polymeric amide?



Answer: B

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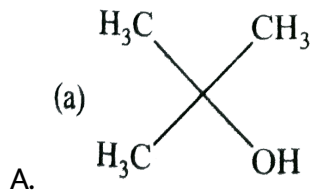
32. Benzoyl chloride is prepared from benzoic acid by :

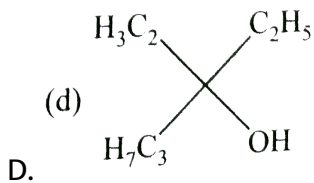
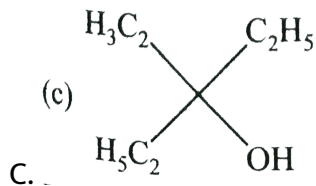
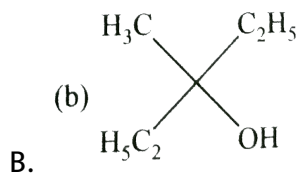


Answer: C

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33. Ethyl ester $\xrightarrow[\text{excess}]{MeMgBr}$ P . The product P will be :

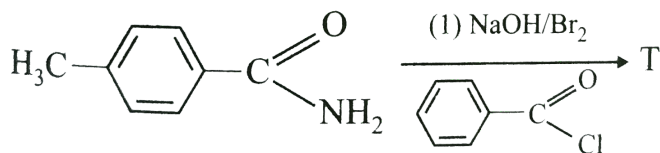




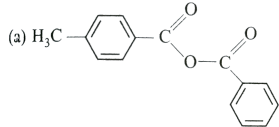
Answer: A

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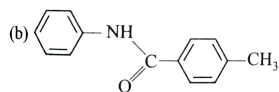
34. In the reaction



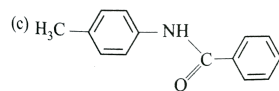
the structure of the product *T* is:



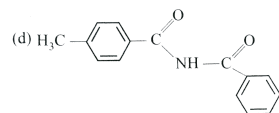
A.



B.



C.

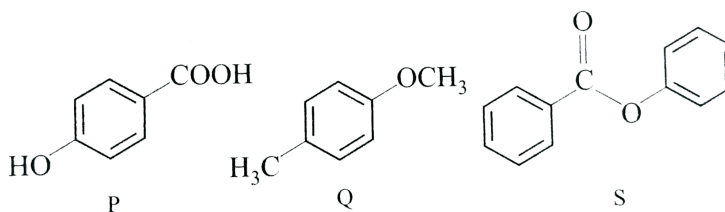


D.

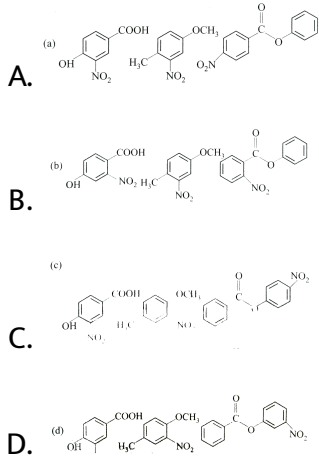
Answer: C

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35. The compound *P*, *Q* and *S*



were separately subjected to nitration using HNO_3 / H_2SO_4 mixture. The major product formed in each case respectively is



Answer: C

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36. The order of decreasing reactivity of reaction with ammonia is

- A. Anhydrides, esters, ethers
- B. Anhydrides, esters, ethers
- C. Ethers, anhydrides, esters
- D. Esters, ethers, anhydrides

Answer: B



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37. $CH_3COOCH_3 + \text{excess } PhMgBr \rightarrow \text{product} \xrightarrow{H^+} X$ The product X is

- A. 1, 1-diphenylethanol
- B. 1, 1-diphenylmethanol
- C. Methyl phenylethanol
- D. Methyl phenylketone

Answer: A



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38. When acetamide is treated with $NaOBr$, the product formed is

- A. CH_3CN
- B. $CH_3CH_2NH_2$

C. CH_3NH_2

D. None fo above

Answer: C

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39. Saponification of ethyl benzoate with saustic soda as alkali gives

A. Benzyl alcohol and ethanoic acid

B. Sodium benzoate and ethanol

C. Benzoic acid and sodium ethoxide

D. Sodium benzoxide and ethanoic acid

Answer: B

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40. Acetyl chloride is reduced with $LiAlH_4$ the product formed is

- A. Methyl alcohol
- B. Ethyl alcohol
- C. Acetaldehyde
- D. Acetone

Answer: B



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41. In the preparation of an ester, the commonly used dehydrating agent is

- A. Phosphorus pentoxide
- B. Anhydrous calcium carbide
- C. Anhydrous aluminium chloride
- D. Concentrated sulphuric acid

Answer: D

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42. Acetamid reacts with P_2O_5 (phosphorus pentoxide) to give

- A. Methyl cyanide
- B. Methyl cyanate
- C. Ethyl cyanide
- D. Ethyl isocyanate

Answer: A

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43. Acetamid is

- A. Acidic

B. Basic

C. Netural

D. Amphoteric

Answer: D



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44. Acetic anhydride reacts with diethyl ether in presence of anhydrous $AlCl_3$ to form

A. Ethyl acetate

B. Methyl propionate

C. Methyl acetate

D. Propionic acid

Answer: A



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45. The reagent which does not give acid chloride on treating with a carboxylic acid is

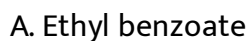


Answer: B



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46. An organic compound is boiled with alcoholic potash. The product is cooled and acidified with HCl . A white solid separates out. The starting compound may be



B. Ethyl formate

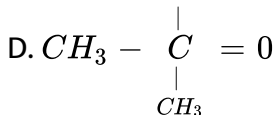
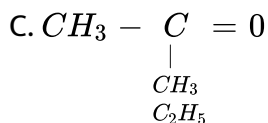
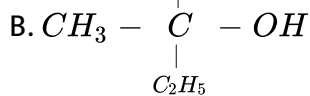
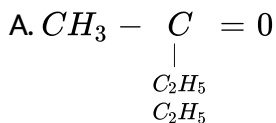
C. Ethyl acetate

D. Methyl acetate

Answer: A

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47. $CH_3COOC_2H_5$ with excess of C_2H_5MgBr and hydrolysis gives



Answer: B

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48. Order of hydrolysis for the following



A. $I > IV > II > III$

B. $I > II > III > IV$

C. $I > III > II > IV$

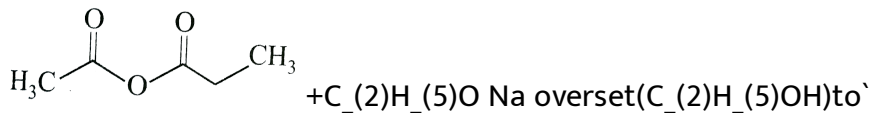
D. $IV > III > II > I$

Answer: A



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1. What is the major in the following reaction?

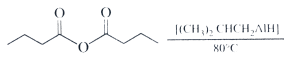


- A. $\text{CH}_3\text{CH}_2\text{COOCH}_3$
- B. $\text{CH}_3\text{CH}_2\text{COOC}_2\text{H}_5$
- C. $\text{CH}_3\text{COOCH}_3$
- D. $\text{CH}_3\text{COOC}_2\text{H}_5$

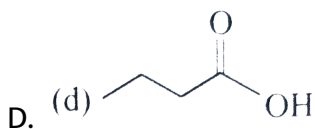
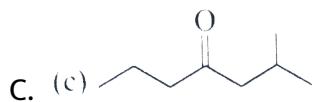
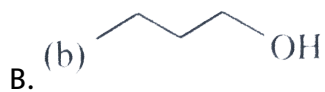
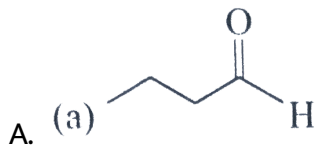
Answer: D

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2. The major organic product formed in the reaction given below is



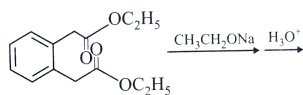
" $\xrightarrow[80^\circ\text{C}]{[(\text{CH}_3)_2\text{CHCH}_2\text{AlH}]}$ "



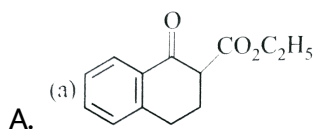
Answer: A

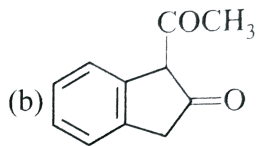
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3. What is the major organic product of the following reaction?

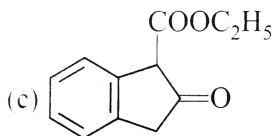


"overset(CH_3)CH_(2)ONa)tooverset(H_(3)O^(+))to`

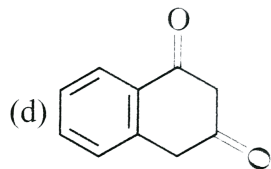




B.



C.



D.

Answer: C

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Section B - Assertion Reasoning

1. Assertion: Lower aldehydes and ketones are soluble in water but the solubility decreases as the molecular mass increases.

Reason : Distinction between aldehydes and ketones.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: B



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2. Assertion: Formic acid reduces mercuric chloride to mercurous chloride on heating , while acetic acid does not.

Reason : Formic acid is stronger acid than acetic acid.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.

B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: B

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3. Assertion: Boiling and melting point of amides are higher than corresponding acids

Reason : It is due to strong intermolecular hydrogen bonding in their molention.

A. If Both assertion and reason are true reason is the correct explanation of the assertion.

B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: A

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4. Assertion: Hydroxyketones are not directly used in Grignard reaction.

Reason : Grignard reagents react with hydroxyl group.

A. If Both assertion and reason are true reason is the correct explanation of the assertion.

B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: A

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5. Assertion: Isobutanal does not give iodoform test.

Reason : It does not have α -hydrogen.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: C

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6. Assertion: The pK_a of acetic acid is lower than that of phenol.

Reason : Phenoxide ion is more resonance stabilised.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: C

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7. Assertion: Acetamide has more polar $>C=O$ group than ethyl acetoacetate.

Reason : $\ddot{N}H_2$ is more electron donating than OC_2H_5

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: A



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8. Assertion: $(CH_3)_3CCOC(CH_3)_3$ and acetone can be distinguished by the reaction with $NaHSO_3$.

Reason : HSO_3 is the nucleophile in bisulphite addition.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.

B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: B

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9. Assertion: Cyclohexanone exhibits keto-enol tautomerism.

Reason : In Cyclohexanone, one from contains the keto group while other contains enolic group ($-C = C - OH$)

A. If Both assertion and reason are true reason is the correct explanation of the assertion.

B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: A

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10. Assertion: Benzaldehyde is more reactive than ethanal towards nucleophilic attack.

Reason : The overall effect of $-I$ and $+R$ effect of phenyl group decrease the electron density on the carbon atom of $>C=O$ group in benzaldehyde.

A. If Both assertion and reason are true reason is the correct explanation of the assertion.

B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: A

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11. Assertion: $p - N, N -$ dimethylaminobenzaldehy under-goes benzoin condensation

Reason : The aldehydic ($-CHO$) group is meta directing.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: B

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12. Assertion: In sodium formate, both the $C - O$ bonds have same value 1.27\AA

Reason : Equal bond length is due to the phenomenon of resonance.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: A



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13. Assertion: Esters which contain $\alpha -$ hydrogens undergo Claisen condensation.

Reason : $LiAlH_4$ reduction of esters gives acids

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: C

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14. Assertion: β -Keto carboxylic acids lose CO_2 when heated of about $370K$.

Reason : An enol is first formed by loss of CO_2 , but it readily tautomerises to the more stable ketone.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: B



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15. Assertion: The acetate ion is resonance stabilized

Reason : Acetate ion is more basic than the methoxide ion.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.

B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: C

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16. Assertion: *p* – hydroxybenzoic acid has a lower boiling point than *o* – hydroxybenzoic acid.

Reason : *o* – hydroxybenzoic acid has intermolecular hydrogen bonding

A. If Both assertion and reason are true reason is the correct explanation of the assertion.

B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: D



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17. Assertion: Aromatic aldehydes can be distinguished from aliphatic aldehydes by fehling's solution

Reason : Fehling's solution is an alkaline solution of $CuSO_4$ containing Rochelle salt.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: B

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18. Assertion: Paracids are stronger acids than corresponding carboxylic acids

Reason : The anion of carboxylic acid is stabilized by resonance but not that of paracids.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: D

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19. Assertion: Acrylic acid ($CH_2 - CHCOOH$) is a weaker acid than benzoic acid (C_6H_5COOH).

Reason : Ethylenic double bond is less electrondonating than benzene ring.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: C



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20. Assertion: Acetoacetic ester (CH_3COCH_2COOH) contains CH_3CO group but does not give iodoform test.

Reason : The H-atoms of the CH_3 group are more acidic than those of CH_2 group

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: C



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21. Assertion: 2 – *Butanal* lacks enolisable H-atom , α - to carbonyl group still it has sufficient acidic character.

Reason : The conjugate base of 2 – *butanal* is stabilised by resonance.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: A



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22. Assertion: Formic acid reduces Tollens reagent.

Reason : Compounds containing *CHO* group reduce Tollens reagent.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: B



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23. Assertion: Aldehyde and ketone undergo nucleophilic addition reaction with carbon nucleophile and undergo nucleophilic addition-elimination reaction with nitrogen nucleophile.

Reason : Addition of nucleophile on aldehyde and ketone form tetrahedral intermediate, in case of tetrahedral intermediate of nitrogen nucleophile nonbonding lone pair of electrons is present while in case of carbon and hydrogen nucleophile nonbonding lone pair of electrons are not present.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: A



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24. Assertion: The rate of addition reaction of alcohol on aldehyde can be increased by adding small amount of base.

Reason : Addition of alcohols to an aldehyde from acetal.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.

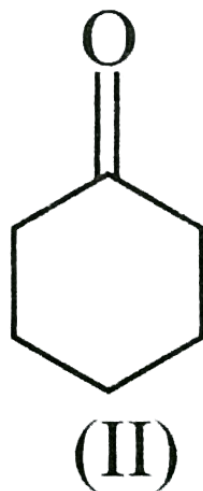
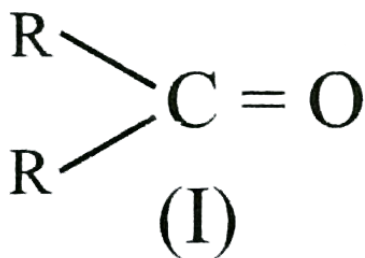
B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: D

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25. Assertion:

Compound II is more reaction towards nucleophilic addition reaction.

Reason : Cyclic ketones are more acyclic ketone due to less steric hindrance and compact structure of cyclic ketone.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: A



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26. Assertion: $NaHSO_3$ is used in separation and purification of aldehydes.

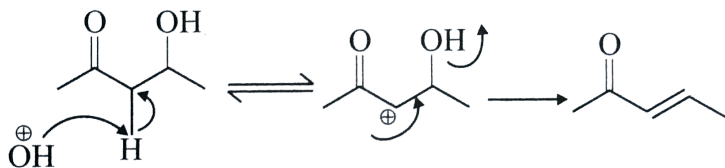
Reason : $NaHSO_3$ is reducing agent.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: B

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27. Assertion: Dehydration of aldol takes place by the following mechanism.



Reason : It is due to acidity of $\alpha - H$ and stability of conjugated double bond.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: A

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28. Assertion: Cinnamaldehyde ($Ph - CH = CH - CHO$) falls to undergo aldol condensation.

Reason : This is due to the fact that cinnamaldehyde does not have acidic $\alpha - H$.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.

B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: A

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29. Assertion: CCl_3CHO forms an isolable crystalline hydrate.

Reason : Electron withdrawing chlorine atoms stabilise hydrate by intramolecular H-bonding.

A. If Both assertion and reason are true reason is the correct explanation of the assertion.

B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: A

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30. Assertion: Acetal are easily converted to parent carbonyl compound.

The easy interconversion makes acetal attractive as protecting group of parent carbonyl compound.

Reason : Acetal are easily hydrolysed in acidic as well as basic medium.

A. If Both assertion and reason are true reason is the correct explanation of the assertion.

B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: C

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31. Assertion: Acetaldehyde reacts with nitromethane in presence of dil. $NaOH$ to give 1-nitro - 2-propanol

Reason : The hydrogen atoms of acetaldehyde are more acidic than nitromethane.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: C

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32. Assertion: The addition of ammonia derivative to a carbonyl compound is carried out in weakly acidic medium.

Reason : In weakly acidic medium attacking nucleophile is also protonated.

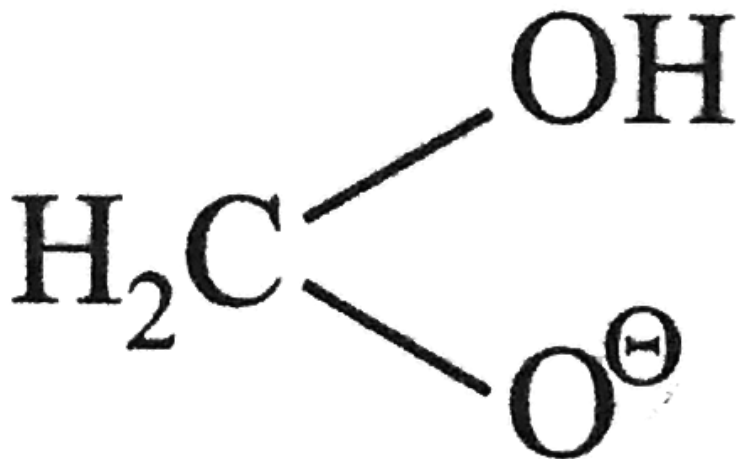
- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: C



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33. Assertion: $HCHO$ is always oxidized in the crossed Cannizzaro reaction. Reason : $HCHO$ is the most reactive aldehyde, it exist in aqueous OH^- solution as the conjugate base of its hydrate



, there is also a statistical factor because $HCHO$ has two aldehydic hydrogen available for transfer while in other aldehyde hydrate anion has only one such hydrogen atom.

- A. If Both assertion and reason are true reason is the correct explanation of the assertion.
- B. If Both assertion and reason are true but reason is not the correct explanation of the assertion.

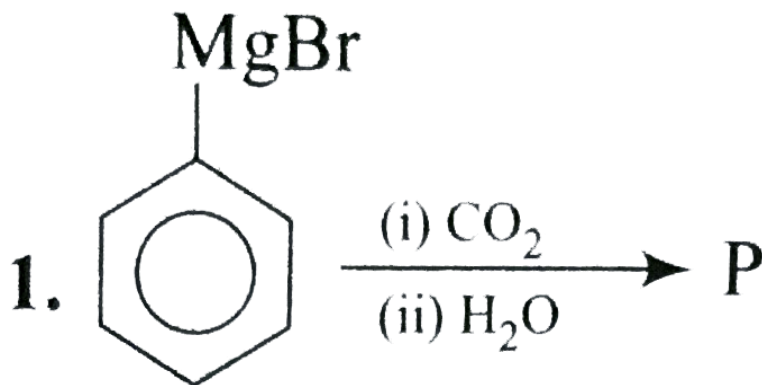
C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: A

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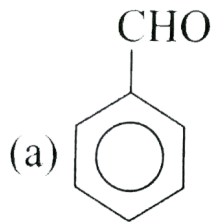
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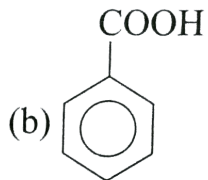
1.

reaction product P is

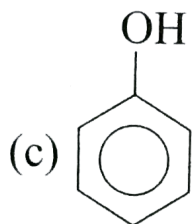
In the



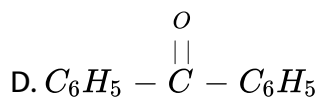
A.



B.



C.

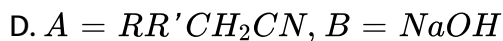
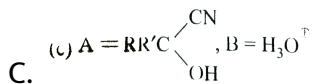
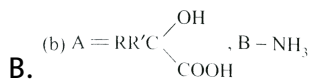
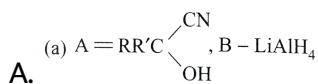
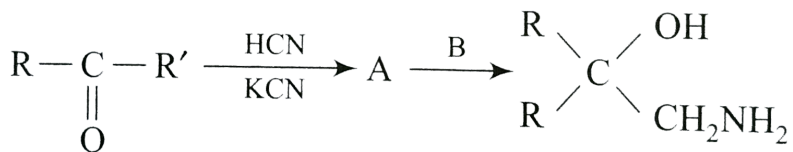


Answer: B



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2. A and B in the following reaction are



Answer: A

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3. Acetic acid is weak acid than sulphuric acid because

A. it decomposes on increasing temperature

B. it has less degree of ionisation

C. it has $COOH$ group

D. none of these

Answer: B

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4. $CH_3COOH \xrightarrow[P_2O_5]{\Delta} X$. *iden* if yX

A. CH_3COCH_3

B. CH_3CHO

C. $(CH_3CO)_2O$

D. CH_4

Answer: C

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5. Which can be oxidized to the corresponding carbonyl compound?

- A. Propan-2-ol
- B. Ortho-nitro-phenol
- C. Phenol
- D. 2-methylpropan-2-ol

Answer: A



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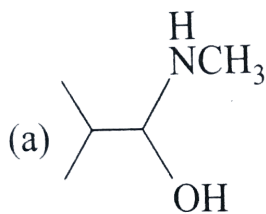
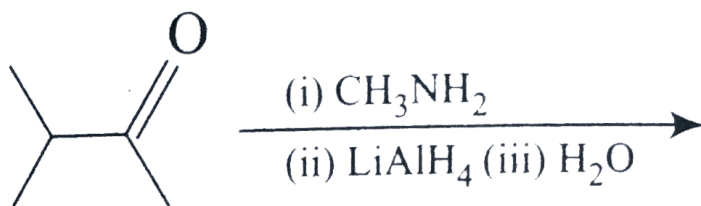
6. Which of the following substances cannot be used for the replacement of $-OH$ group in organic compound by Cl ?

- A. S_2Cl_2
- B. $SOCl_2$
- C. PCl_3
- D. PCl_5

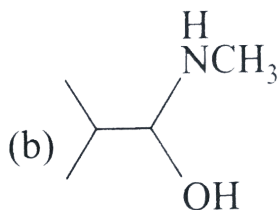
Answer: A

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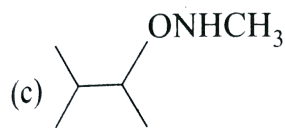
7. The major organic formed in the following reaction is



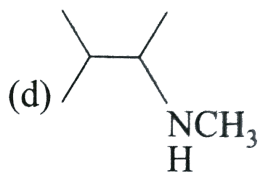
A.



B.



C.

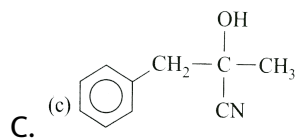
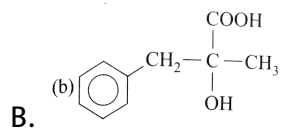
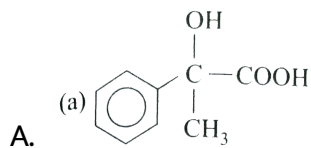
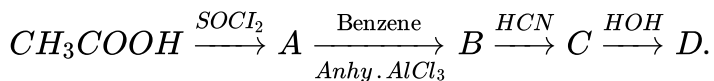


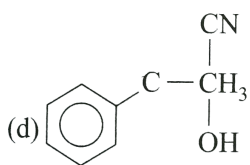
D.

Answer: D

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8. In a act of reactions, acid yielded a product *D*





D.

Answer: A

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9. A carbonyl compound reacts with hydrogen cyanide to form cyanohydrin which on hydrolysis forms a racemic mixture of α -hydroxy acid. The carbonyl compound *D*.

A. diethyl ketone

B. formaldehyde

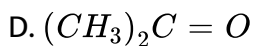
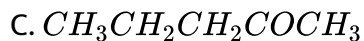
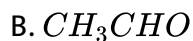
C. acetaldehyde

D. acetone

Answer: C

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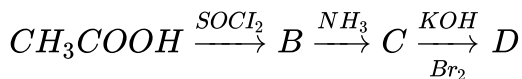
10. Nucleophilic addition reaction will be most favoured in



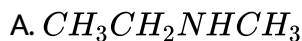
Answer: B

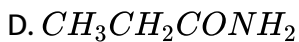
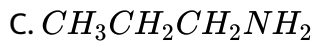
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11. In a set reaction propionic acid yielded a compound D



The structure of D would be





Answer: B

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12. Self-condensation of two moles of ethyl acetate in presence of sodium ethoxide yields

A. Methyl acetoacetate

B. ethyl propionate

C. ethyl butyrate

D. acetoacetic ester

Answer: D

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13. Reduction of aldehydes and ketones into hydrocarbons using

$Zn - Hg + HCl$ is called.

- A. Cope reaction
- B. Dow reaction
- C. Wolff-Kishner reaction
- D. Clemmensen reduction

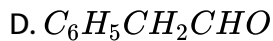
Answer: D



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14. Which of the following on treatment with 50% aqueous $NaOH$ gives alcohol and acid?

- A. C_6H_5CHO
- B. $CH_3CH_2CH_2CHO$
- C. CH_3COCH_3



Answer: A

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15. The product formed in aldol condensation is

A. a β – hydroxy acid

B. an α – hydroxy aldehyde or ketone

C. an α, β -unsaturated ester

D. a β – hydroxy aldehyde or a β -hydroxy ketone

Answer: D

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16. Which of the following order is wrong with respect to property indicated?

A. Formic acid > Acetic acid > propionic acid (Acid strength)

B. Fluoro acetic acid > Chloro acetic > Bromo acetic acid (Acid strength)

C. Benzoic acid > Phenol > Cyclohexanol (Acid strength)

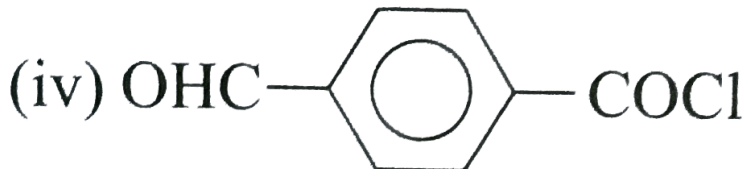
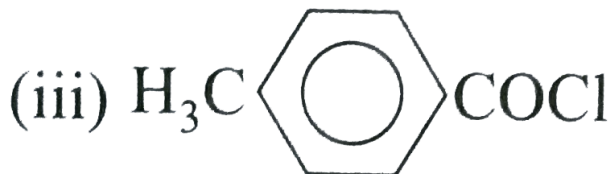
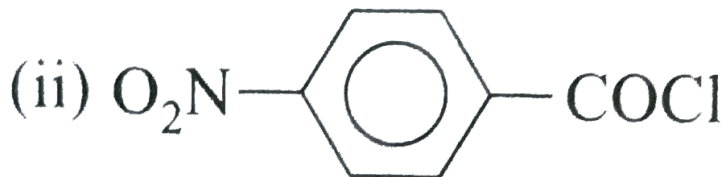
D. Aniline > Cyclohexylamine > Benzamide (Base strength)

Answer: D



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17. The correct decreasing order of their reactivity towards hydrolysis is



A. (i) > (ii) > (iii) > (iv)

B. (ii) > (iv) > (i) > (iii)

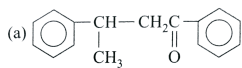
C. (iv) > (ii) > (i) > (iii)

D. (ii) > (iv) > (iii) > (i)

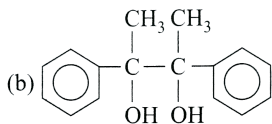
Answer: B

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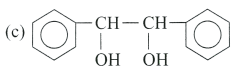
18. Acetophenone when reacted with a base $C_2H_5O^-Na^+$ yields a stable compound which has the structure



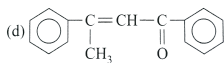
A.



B.



C.

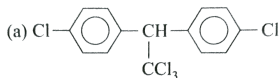


D.

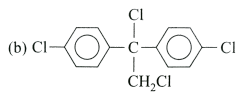
Answer: D

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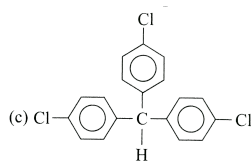
19. Trichloroacetaldehyde, CCl_3CHO . Reacts with chlorobenzene in presence of sulphuric acid and produces.



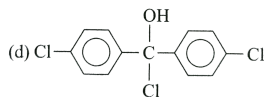
A.



B.



C.

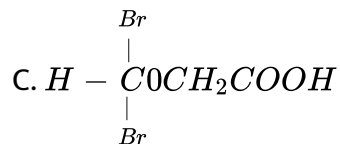
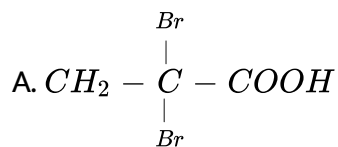


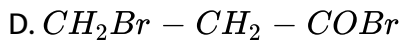
D.

Answer: A

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20. Propionic acid with Br_2 | P yields a dibromo product. Its structure would be





Answer: A

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21. The relative reactivities of acyl compound towards nucleophilic substitution are in the order of

- A. ester gt acyl chloride gt amide gt acid anhydride
- B. acid anhydride gt amide gt ester gt acyl chloride
- C. acyl chloride gt ester gt acid anhydride gt amide
- D. acyl chyl chloride gt acid anhydride gt ester gt amide

Answer: D

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22. Acetamide is treated with the following reagents separately. Which one of these would yield methyl amine?



B. Sodalime

C. Hot cone. H_2SO_4



Answer: D



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23. Clemmensen reduction of a ketone is carried out in the presence of which of the following ?

A. H_2 and Pt as catalyst

B. Glycol with KOH

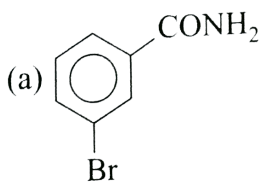
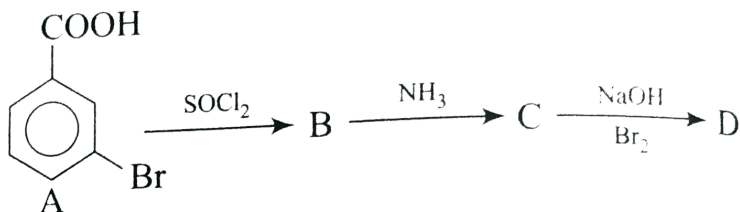
C. $Zn - Hg$ with HCl

D. $LiAlH_4$

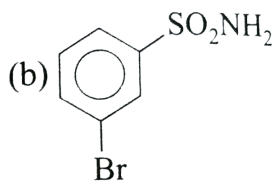
Answer: C

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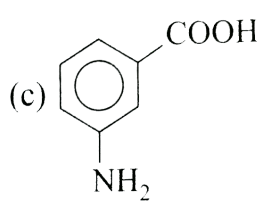
24. In a set of reaction m-bromobenzoic acid gave a product *D*. Identify the product *D*



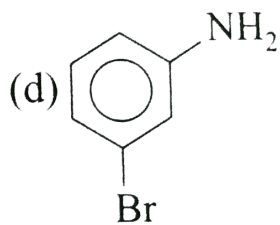
A.



B.



C.

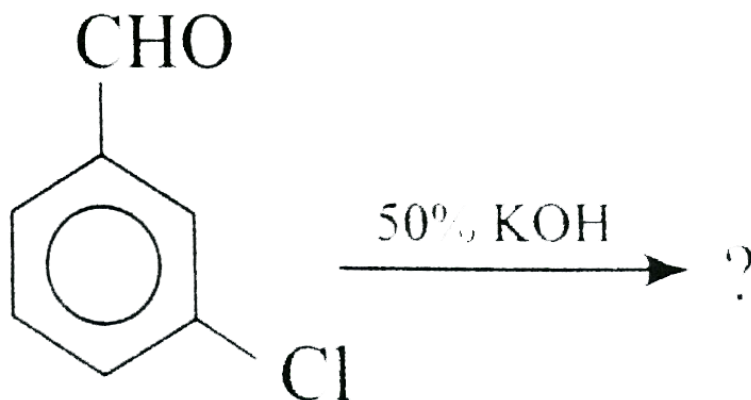


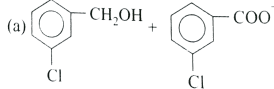
D.

Answer: D

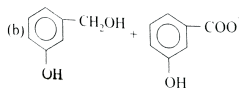
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25. Predict the products in the given reaction

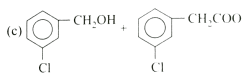




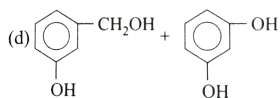
A.



B.



C.



D.

Answer: A



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26. CH_2CHO and $C_6H_5CH_2CHO$ can be distinguished chemically by

A. Tollens reagent test

B. Fehling's solution test

C. Benedict's test

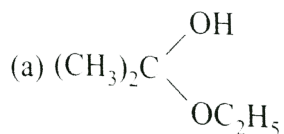
D. Iodoform test

Answer: D

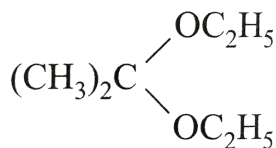


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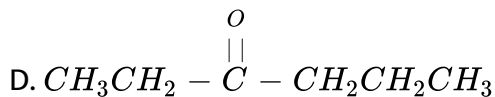
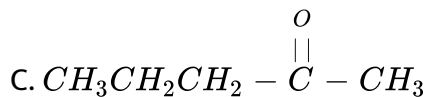
27. Acetone is treated with excess of ethanol in the presence of hydrochloric acid. The product obtained is



A.



B.

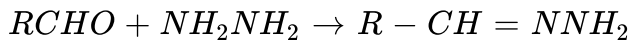


Answer: B



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28. Consider the reaction



What sort of reaction is it?

- A. Electrophilic addition - elimination reaction
- B. Free radical addition - elimination reaction
- C. Electrophilic substitution - elimination reaction
- D. Nucleophilic addition - elimination reaction

Answer: D



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29. Which of the following compound will give a yellow precipitate with iodine and alkali?

- A. Acetophenone
- B. Methyl acetate

C. Acetamide

D. 2-hydroxypropane

Answer: A::D

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30. The correct order of decreasing acid strength of trichloroacetic acid.

(A), trifluoroacetic acid (B), acetic acid (C), and formic acid (D) is

A. $A > B > C > D$

B. $B > A > D > C$

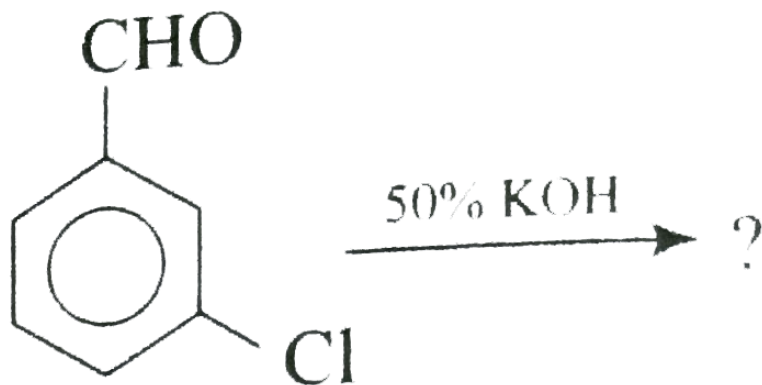
C. $A > C > B > D$

D. $B > D > C > A$

Answer: B

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31. Consider of the following reaction



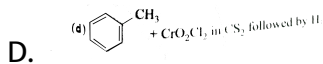
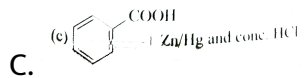
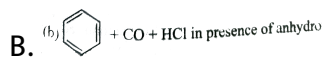
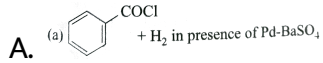
The product 'A' is

- A. C_6H_5Cl
- B. C_6H_5OH
- C. $C_6H_5COCH_3$
- D. C_6H_5CHO

Answer: D

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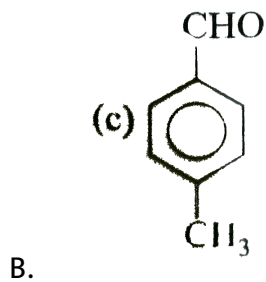
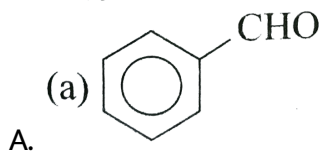
32. Reaction by which Benzaldehyde cannot be prepared?

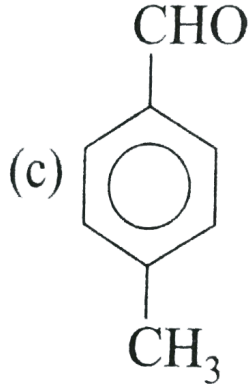


Answer: C

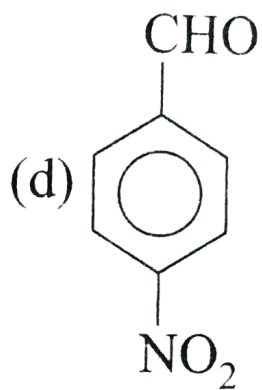
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33. Which one is most reactive towards nucleophilic addition reaction?





c.

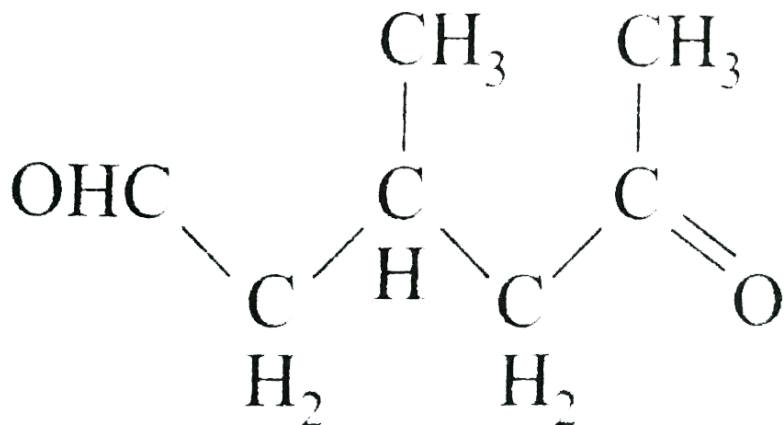


D.

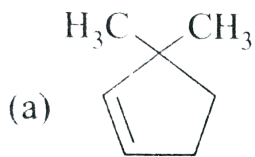
Answer: D

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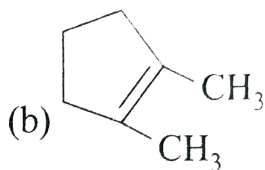
34. A single compound of the structure.



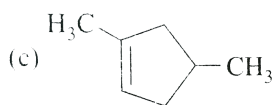
is obtainable from ozonolysis of which of the following cyclic compounds?



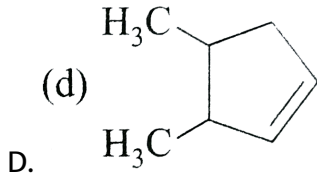
A.



B.



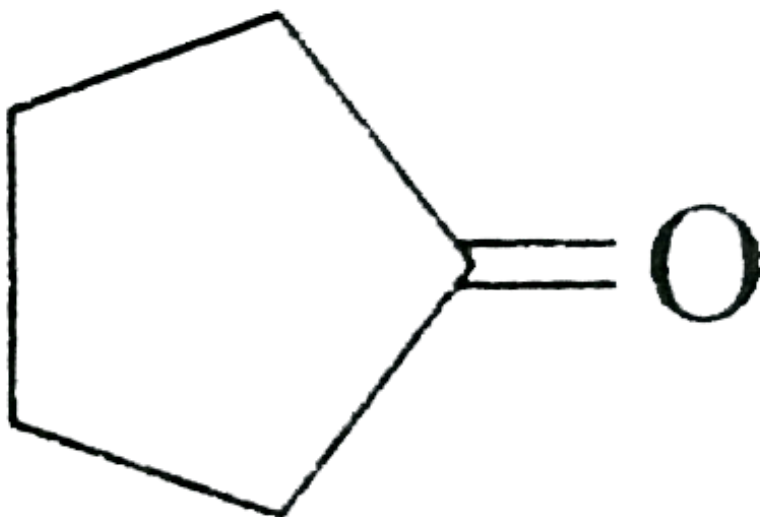
C.



Answer: C

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35. Treatment of cyclopentanone



with methyl

lithium gives which of the following species?

A. Cyclopentanonyl radical

B. Cylopentanonyl biradical

C. Cylopentanonyl anion

D. Cylopentanonyl cation

Answer: C

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36. An organic compound 'X' having molecular formula $C_5H_{10}O$ yield phenylhydrazone and gives negative response to the iodoform test and Tollens test . It produces n-pentane on reduction 'X' could be

A. 3-pentanone

B. n-amyl alcohol

C. pentanal

D. 2-pentanone

Answer: A



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37. Reaction of carbonyl compound with one of the following reagents involves nucleophilic addition followed by elimination of water. The reagent is:

- A. hydrocyanic acid
- B. sodium hydrogen sulphite
- C. a Grignard reagent
- D. hydrazine in presence of feebly acidic solution

Answer: D



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38. The product formed by the reaction of an aldehyde with a primary amine is:

A. Aromatic acid

B. Schiff base

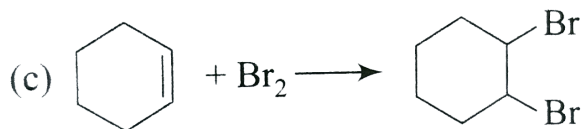
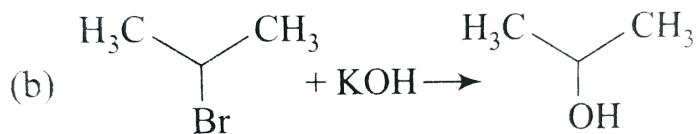
C. Ketone

D. Carboxylic acid

Answer: B

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39. For the following reactions:



Which of the following statement is correct?

A. (a) is substitution, (b) and (c) are addition reactions

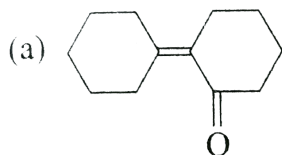
C. A-Ethanol, X-Acetaldehyde, Y-Butanone, Z-hydrazine

D. A-Methoxymrthane , X-Ethnoic acid, Y-Acetate ion, , Z-hydrazine

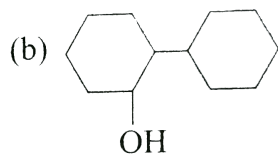
Answer: B

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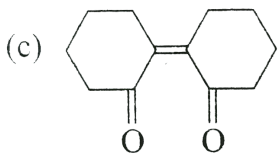
41. Of the following which is the product formed when cyclohexanone undergoes aldol condensation followed by heating?



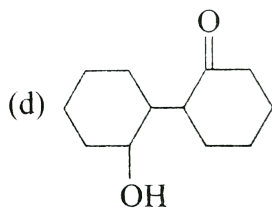
A.



B.



C.



D.

Answer: A

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42. Carboxylic acid have higher boiling points than aldehydes, ketones and even alcohol of comparable molecular mass. It is due to their

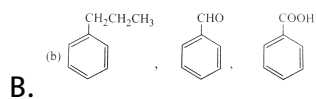
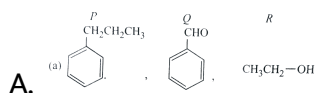
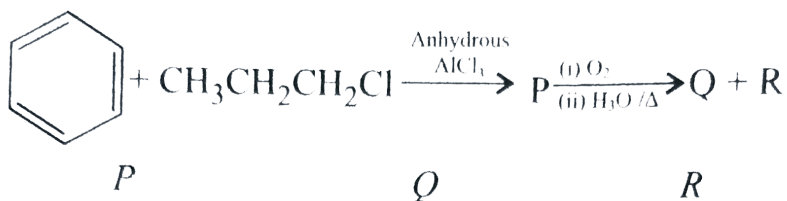
- A. Formation of intramolecular H-bonding
- B. Formation of carboxylate ion
- C. more extensive association of carboxylic acid via van der Waals force attraction.
- D. Formation of intermolecular H-bonding

Answer: A



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43. Identify the major product P, Q and R in the following sequence of reactions:



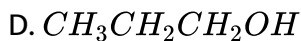
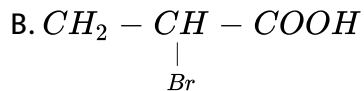
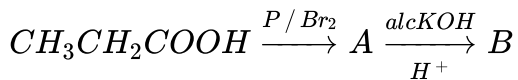
C. 

Answer: D



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1. In the following reaction order, B is

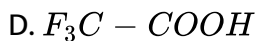
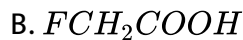
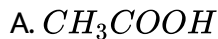


Answer: A



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2. Strongest acid among the following is



Answer: D



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3. Aldehydes and ketone can be distinguished by

A. Ammonia

B. H_2SO_4

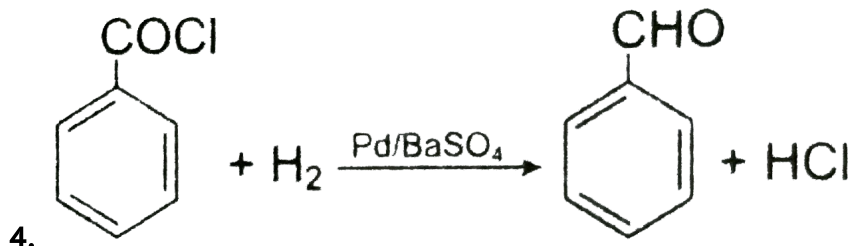
C. Alkaline $KMnO_4$

D. Fehling solution

Answer: D



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The above reaction is

- A. Clemmensen's reduction
- B. Rosenmund reduction
- C. Birch reduction
- D. Wolf-Kishner reduction

Answer: B

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5. The intermediate formed in aldol condensation is

- A. aldol
- B. carbanion

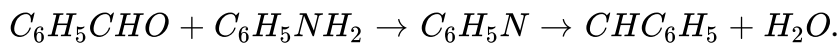
C. alcohol

D. α -hydrogen ester

Answer: B

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6. In the reaction



The compound $C_6H_5N = CHC_6H_5$ is known as

A. aldol

B. Schiff base

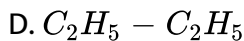
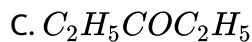
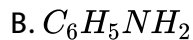
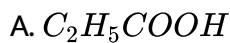
C. Schiff's reagent

D. Benzedict's reagent

Answer: B

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7. The compound most suitable for the preparation of cyanohydrin is

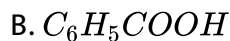
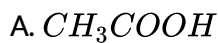


Answer: C



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8. Among the following the strongest acid is



Answer: B

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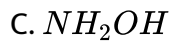
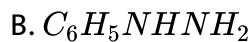
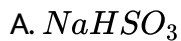
9. At higher temperature, iodoform reaction is given by the dilute solution of

- A. $CH_3CO_2CH_3$
- B. $CH_3CO_2C_2H_5$
- C. $CH_3CO_2C_6H_5$
- D. $C_2H_5CO_2CH_3$

Answer: B

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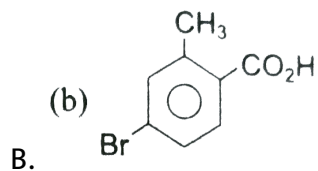
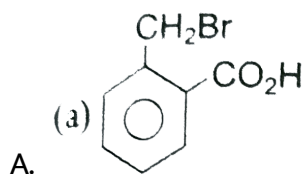
10. The reagent used for the separation of acetaldehyde from acetophenone is

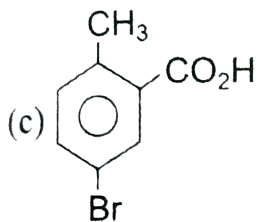


Answer: A

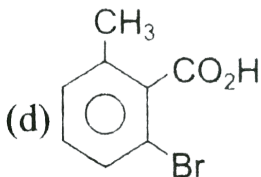
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11. *o*-Toluic acid on reaction with $\text{Br}_2 + \text{Fe}$ gives





C.

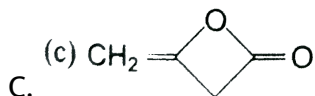
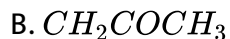


D.

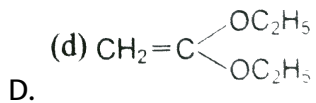
Answer: C

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12. $CH_3CO_2C_2H_5$ on reaction with sodium ethoxide in ethanol gives *A*, which on heating in the presence of acid gives *B* compound *B* is



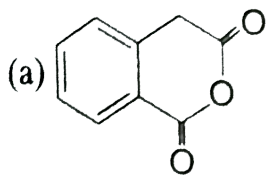
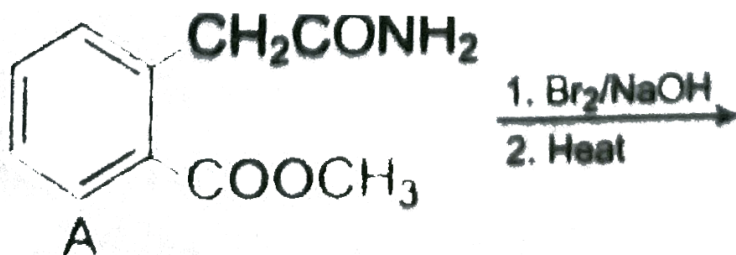
C.



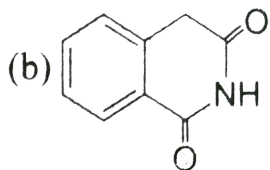
Answer: B

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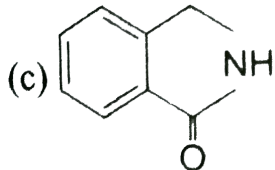
13. The following sequence of reaction on Agives



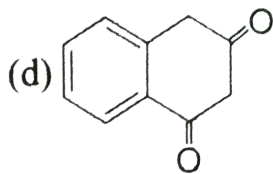
A.



B.



C.

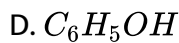
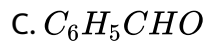
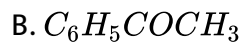
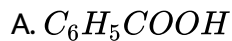


D.

Answer: C

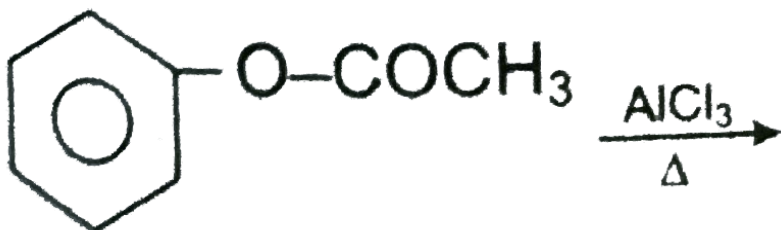
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14. Isopropylbenzene on air oxidation in the presence of dilute acid gives



Answer: D

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15.

The product obtained is//are

- A. o-product
- B. m-product
- C. o- and p-product
- D. o-, m- and p-product

Answer: C

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16. Benzoic acid is treat with lithum aluminium hydride.

A. benzaldehyde

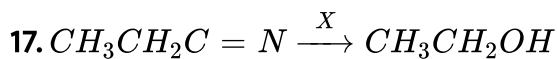
B. benzyl alcohol

C. toluene

D. benzene

Answer: B

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The compound X is

A. $SnCl_2 / HCl / H_2O$, boil

B. $H_2 / Pd - BaSO_4$

C. $LiAlH_4 / ether$

D. $NaBH_4 / ether / H_3O^+$

Answer: A

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18. Which of these compound is synthesised by chloral?

A. DDT

B. BHC

C. chloroform

D. Michles ketone

Answer: A

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19. Prologed exposure of far or oil in moist air and light causes had smell (rancidity). It is due to

A. formation of $C_6 - C_{12}$ fatty acids

B. formation of ketone and aldehyde

C. both of these causes

D. formation of glycerol

Answer: C

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20. 3-hydroxybutanal formed when X reacts with Y in dilute Z solution.

What are X, Y, and Z?

A. $X = CH_3CHO$, $Y = (CH_3)_2CO$, $Z = NaOH$

B. $X = CH_3CHO$, $Y = CH_3CHO$, $Z = NaCl$

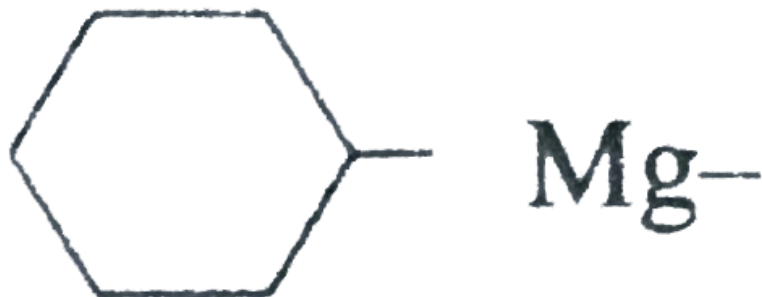
C. $X = (CH_3)_2CO$, $Y = (CH_3)_2CO$, $Z = HCl$

D. $X = CH_3CHO$, $Y = CH_3CHO$, $Z = NaOH$

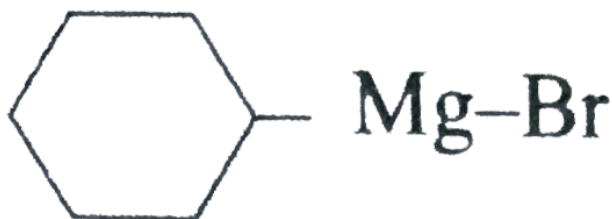
Answer: D

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21. In the reaction

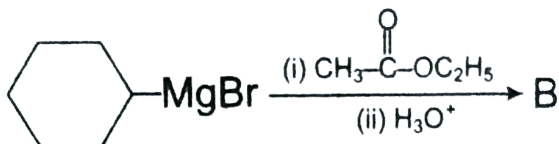
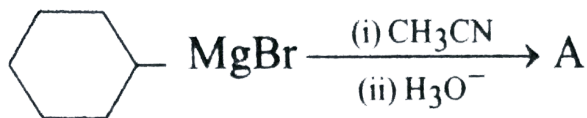


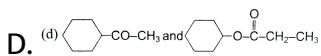
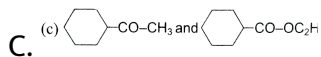
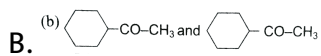
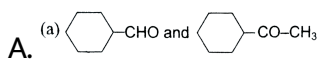
Mg-Br is the
treated with CH_3CN and then hydrolysed. In another reaction.



hydrolysed.

-Mg-Br is
treated with ethyl acetate and then hydrolysed.

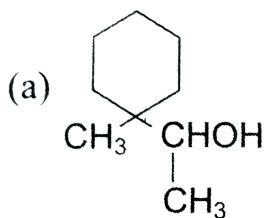
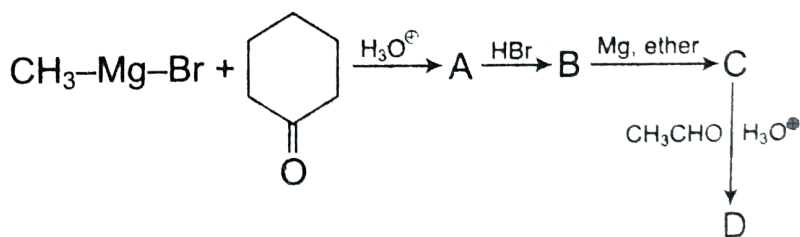




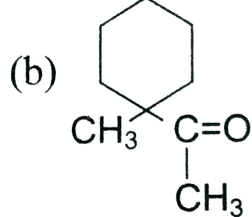
Answer: B

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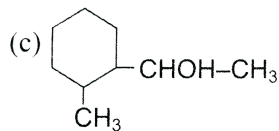
22. In the following sequence of the reaction, identify the final product



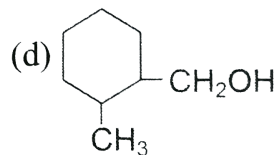
A.



B.



C.

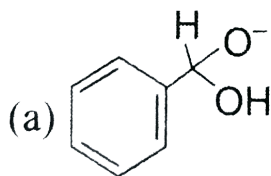


D.

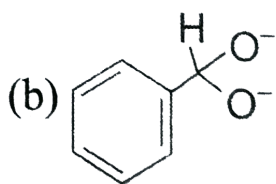
Answer: A

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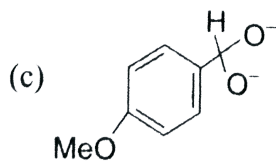
23. In a Cannizaro reaction the intermediate that will be the best hydride donor is



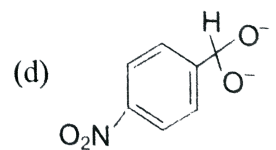
A.



B.



C.

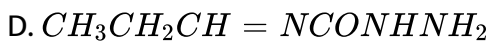
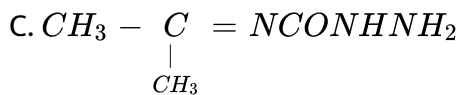
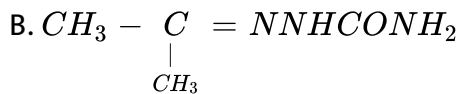
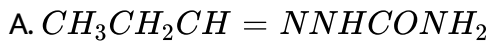


D.

Answer: D

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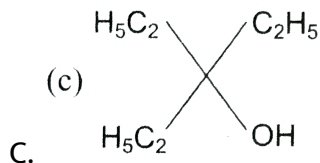
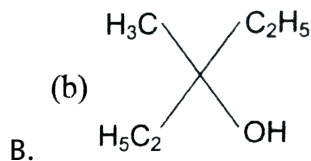
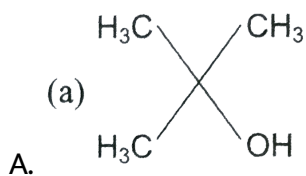
24. Compound A (molecular formula C_3H_8O) is treated with acidified potassium dichromate to form a product B (molecular formula C_3H_6O). B forms shining silver mirror on warming with ammoniacal silver nitrate. B when treated with an aqueous solution of $H_2NCONHNH_2$, HCl and solution acetate gives a product C. Identify the structure of C.

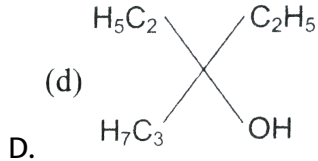


Answer: A

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25. Ethyl ester $\xrightarrow[\text{excess}]{MeMgBr}$ P . The product P will be :





Answer: A

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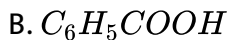
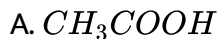
26. $(CH_3)_3C - CHO$ does not undergo aldol condensation due to

- A. three electron donating methyl groups
- B. Cleavage taking place between $-C - CHO$ bond
- C. absence of alpha hydrogen atom in the molecule
- D. bulky $(CH_3)_3C$ - group

Answer: C

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27. Maximum decarboxylation occurs in

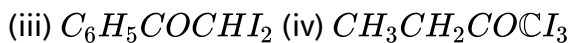
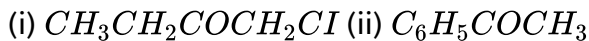


Answer: D



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28. Which of the following undergoes haloform reaction?



A. only (ii)

B. (ii) and (iv)

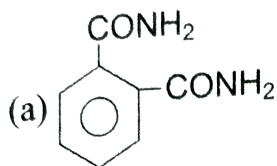
C. (i), (ii) and (iv)

D. all the four

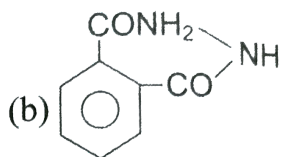
Answer: D

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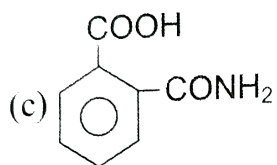
29. If phthalic acid is treated with NH_3 and then it is first heated weakly then strongly, the final product formed is



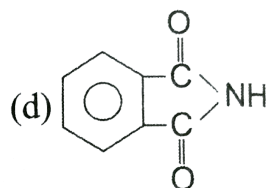
A.



B.



C.

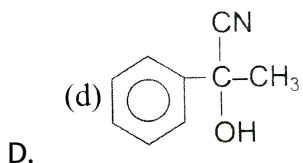
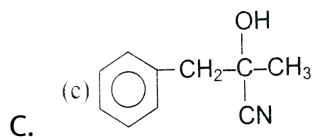
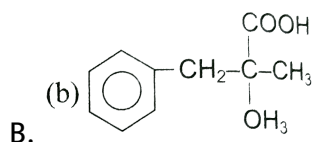
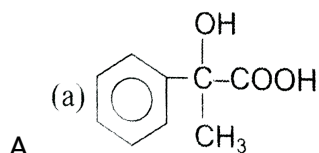
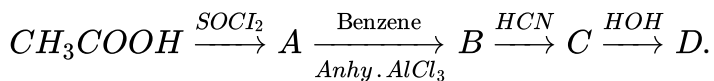


D.

Answer: D

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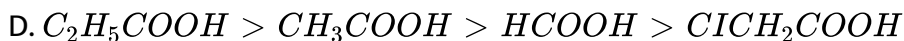
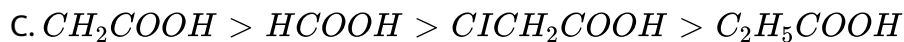
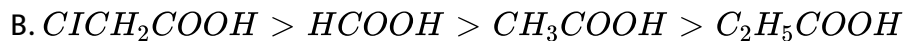
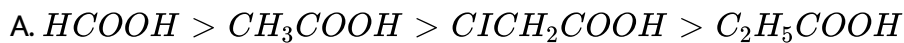
30. In a act of reactions, acid yielded a product *D*



Answer: A

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31. Which of the following is correct order of acidity?

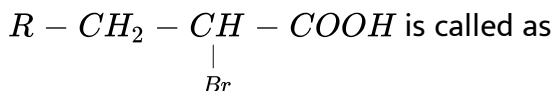
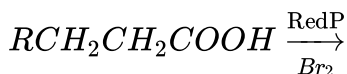


Answer: B



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32. The reaction



A. Reimer-Tiemann reaction

B. Hell-Volhard zelinsky reaction

C. Cannizare reaction

D. Sandmeyer reaction

Answer: B

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33. Arrange the following compound in increasing order of reactivity towards nucleophilic addition reaction

(I) $C_6H_5COCH_3$ (II) $CH_3CO - C_2H_5$

C_6H_5CHO (IV) $CI - CH_2 - CHO$

A. IV > III > II > I

B. IV > II > III > I

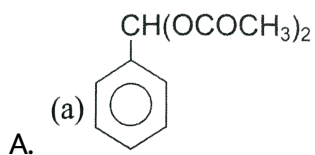
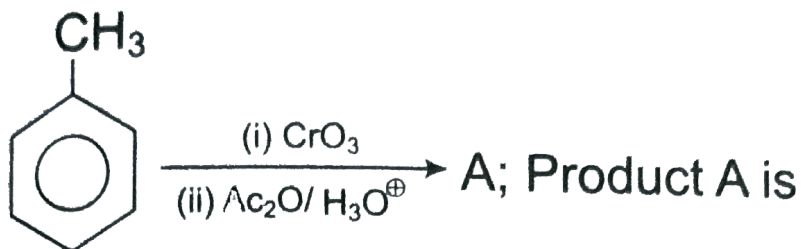
C. I > II > III > IV

D. III > IV > II > I

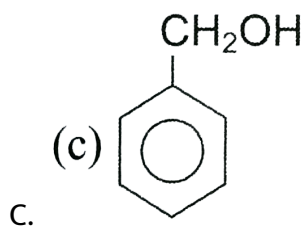
Answer: A

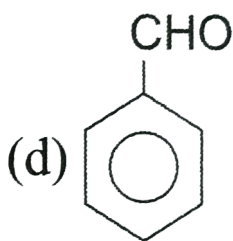
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34. Complete the following reaction



B. 





Answer: D

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35. which of the following products is formed when benzaldehyde is treated with CH_3MgBr and the addition product so obtained is subjected to acid hydrolysis?

- A. A secondary alcohol
- B. A primary alcohol
- C. phenol
- D. tert-Butyl alcohol

Answer: A





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36. Aldehydes with $\alpha - H$ atom do not undergo disproportionation because:

- A. Bond energy of ($C - H$) bond is increased due to ($-CHO$) group.
- B. Aldehyde is enolised in basic condition
- C. Both
- D. None

Answer: B



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37. Which of the following tests would help in the distinction of $HCOOH$ and CH_3COOH ?

A. Treatment with Tollens reagent

B. Treatment with $NaOH$

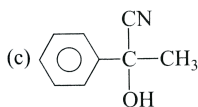
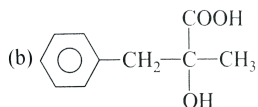
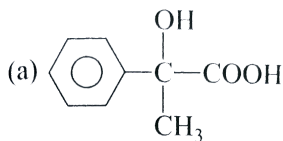
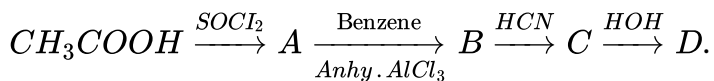
C. Treatment with Na

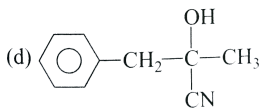
D. Formation of their respective amides

Answer: A

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38. In a set of reactions, acid yielded a product D



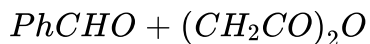


D.

Answer: A

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39. What is the name of the following reaction?

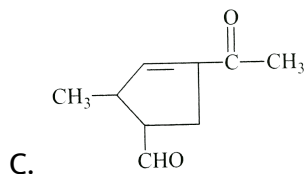
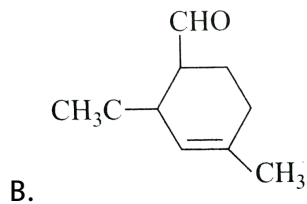
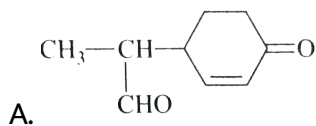
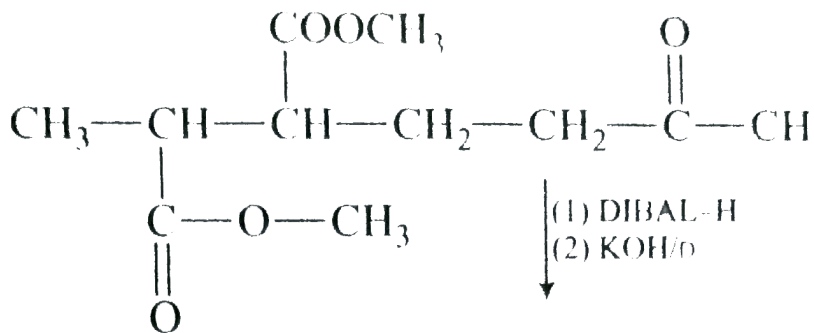


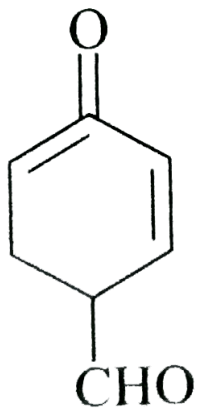
- A. Oxymercuration demercuration reaction
- B. Cannizzaro reaction
- C. Knoevenagel's reaction
- D. Perkin reaction

Answer: D

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40. Complete the following reaction





D.

Answer: A



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Assertion-Reasoning Questions

1. Assertion : Aldol condensation can be catalysed can be cataysed both acid and bases.

Reason : β - hydroxy aldehydes or ketones readily undergo acid catalysed dehydration.

- A. If Both assertion and reason are true reason is a true explanation of the assertion.
- B. If Both assertion and reason are true but the reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: B



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2. Assertion : CH_3COCl is converted to CH_3CONH_2 on reaction with NH_3 .

Reason : Cl is a stronger nucleophile and better leaving group.

- A. If Both assertion and reason are true reason is a true explanation of the assertion.

B. If Both assertion and reason are true but the reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: C

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3. Assertion : 2, 2 – Dimethylpropanal undergoes Cannizzaro reaction with cone. $NaOH$

Reason : Cannizzaro reaction is a disproportionation reaction

A. If Both assertion and reason are true reason is a true explanation of the assertion.

B. If Both assertion and reason are true but the reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: B

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4. Assertion : Mixture of benzaldehyde and acetaldehyde in hot alkaline medium gives cinnamaldehyde.

Reason : Benzaldehyde is strong electrophile than acetaldehyde.

- A. If Both assertion and reason are true reason is a true explanation of the assertion.
- B. If Both assertion and reason are true but the reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: A



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5. Assertion : cis- 3 - chloroprop - 2enoic acid is less stable than its trans-form.

Reason : Dipole moment of cis-form is greater than transform.

- A. If Both assertion and reason are true reason is a true explanation of the assertion.
- B. If Both assertion and reason are true but the reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: B



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6. Assertion : Aromatic aldehydes and formaldehyde undergo Cannizzaro reaction

Reason : Aromatic aldehydes are almost reactive a formaldehyde.

- A. If Both assertion and reason are true reason is a true explanation of the assertion.
- B. If Both assertion and reason are true but the reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: C



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7. Assertion : $HCOOH$ formic acid add react with H_2SO_4 to form CO .

Reason : H_2SO_4 is mild (moderate) oxidizing agent.

- A. If Both assertion and reason are true reason is a true explanation of the assertion.
- B. If Both assertion and reason are true but the reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: B



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Section D - Chapter End Test

1. Aldehydes with $\alpha - H$ atom do not undergo disproportionation because:
- A. Bond energy of ($C - H$) bond is increased due to ($-CHO$) group.

B. Aldehyde is enolised in basic condition

C. Both of these

D. None of these

Answer: B

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2. Which of the following tests would help in the distinction of $HCOOH$ and CH_3COOH ?

A. Treatment with Tollens reagent

B. Treatment with $NaOH$

C. Treatment with Na

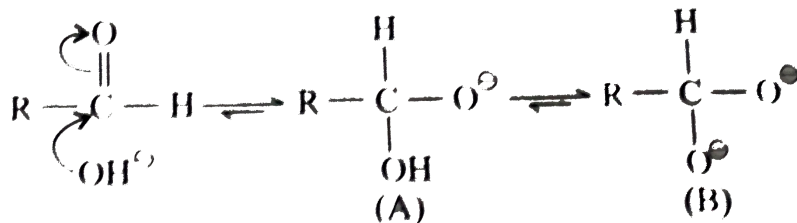
D. Formation of their respective amides

Answer: A

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3. In Cannizzaro reaction, which of the following is a better hydride donor

?



A. (A)

B. (B)

C. Both

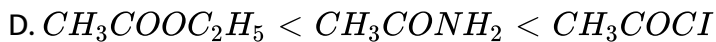
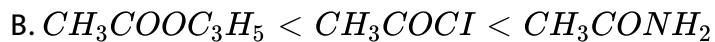
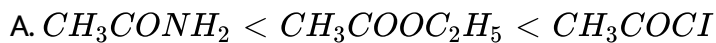
D. None

Answer: B



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4. Mark the correct order of increasing reactivity.

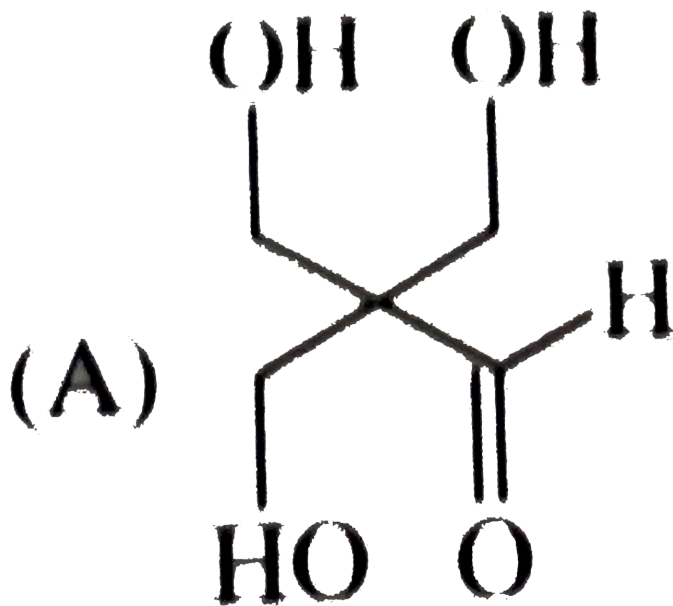


Answer: A



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5. Compound (A) given below can undergo Cannizzaro reaction itself and crossed Cannizzaro reaction with HCHO. It is because of:



A. It has three ($-CH_2OH$) group.

B. It has an aldehyde group.

C. It has non-enolisable $\alpha - C$

D. It has a keto group

Answer: C

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6. $CH_3CH = CHCHO$ is oxidised to $CH_3CH = CHCOOH$ using :

A. Alkaline $KMnO_4$

B. Selenium Dioxide

C. Ammoniacal $AgNO_3$

D. All

Answer: B

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7. Clemmensen's reduction will convert cyclohexanone into:

A. Cyclopentanone

B. Cyclohexane

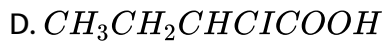
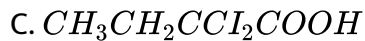
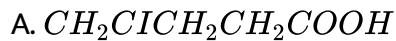
C. n-Hexane

D. Benzene

Answer: B

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8. What of the following is expected to be most highly ionised in water ?



Answer: C



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9. Ethylidene chloride is hydrolysed with aqueous NaOH. The product formed is:

A. Ethanol

B. Ethanal

C. Ethanone

D. Ethane

Answer: B



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10. The vapours of ethyl alcohol are passed over red hot copper at 573 K to form:

A. Methane

B. formaldehyde

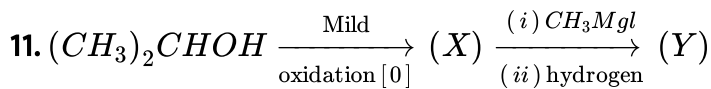
C. Acetone

D. Acetaldehyde

Answer: D



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In the above sequence of reaction. (Y) is:

- A. Isobutyl alcohol
- B. n-Butyl alcohol
- C. Tertiary butyl alcohol
- D. Isobutylene

Answer: C



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12. The chemical reaction of acetaldehyde and ammonia results in:

- A. Ethylamine
- B. Hexamethylenetraamine
- C. acetic

D. Acetaldehyde ammonia

Answer: D

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13. When diethyl cadmium $[(C_2H_5)_2Cd]$ is treated with acetyl chloride $[CH_3COCl]$, the main product likely to be:

A. Acetone

B. Methyl ethyl ketone

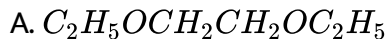
C. Diethyl ketone

D. Acetaldehyde

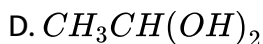
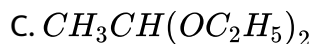
Answer: B

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14. The product formed by the reaction of acetaldehyde with excess of ethanol in the presence of sulphuric acid is:



B. ketal



Answer: C



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15. Which of the following will not be formed when calcium formate is distilled with calcium acetate ?

A. Acetone

B. Propanal

C. Ethanal

D. Methanal

Answer: B

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16. In order to prepare acetone from acetyl chloride in one step, which of the following reagents will be best ?

A. Reduction with $H_2 / Pd - BaSO_4$

B. Reduction with HI

C. Grignard's reagent

D. Dimethyl cadmium

Answer: D

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17. Which of the following reagents can help in separating a mixture of acetone and CCl_4 ?

A. $NaOH$

B. $NaCl$

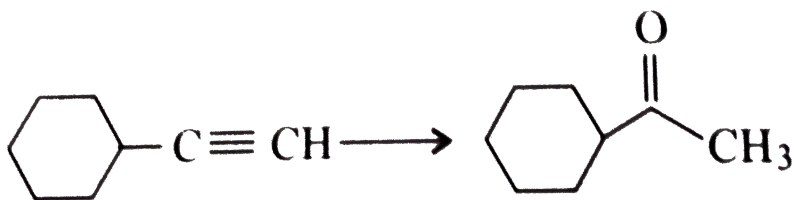
C. $NaHSO_3$

D. None of the above

Answer: C

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18. The reagents used to convert



A. (I) = O_3/Red , (II) = $AlCl_3$, (III) = $MeCOOH$

B. (I) = $H_2SO_4 + HgSO_4$, (II) = H_2O , heat, (III) =

C. (I) = $O_3 / Zn - AeOH$, (II) = H_2SO_4 , (III) = H_2O , heat

D. (I) = CH_2COOH , (II) = H_2O_2 , (III) = OH / H_2O

Answer: B

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19. Which of the following is the stronger acid?

A. Benzoic acid

B. 4-Nitro benzoic acid

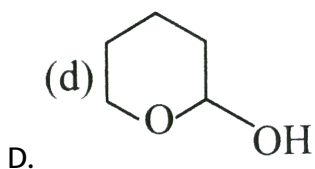
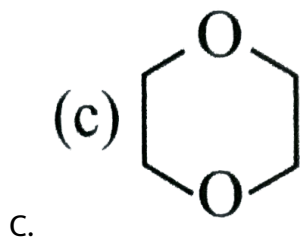
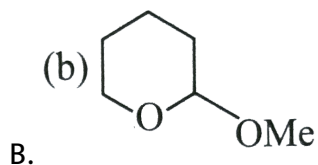
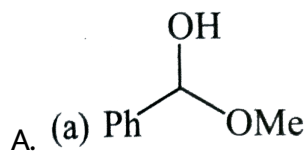
C. 4-Methoxy benzoic acid

D. 4-Methyl benzoic acid

Answer: B

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20. Of the following which compound is an acetal ?



Answer: B



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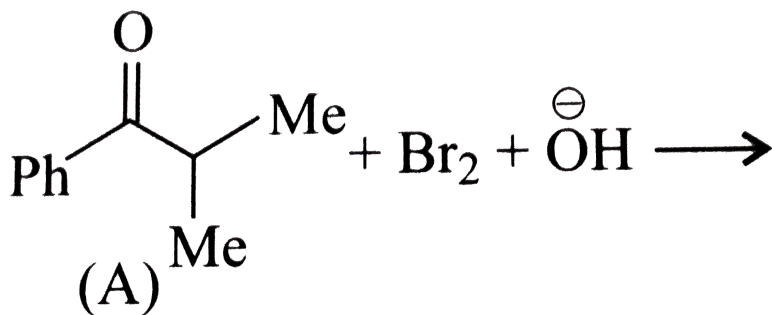
21. Which reagent can distinguish between pentanoic acid and pentanamide?

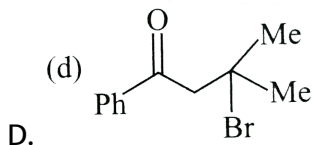
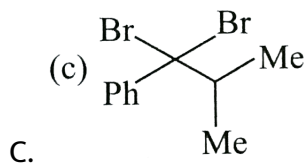
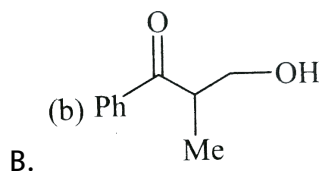
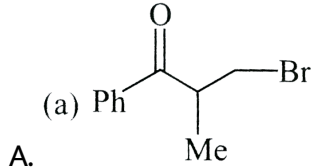
- A. Cold dil. $NaOH$
- B. Cold dil. $NaHCO_3$
- C. Cold conc. H_2SO_4
- D. All

Answer: D

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22. The major product of the reaction is:

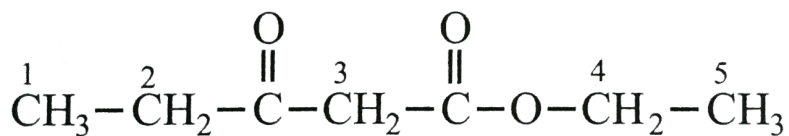




Answer: D

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23. Which Hatom in the following ester is most acidic?



A. 1

B. 3

C. 2

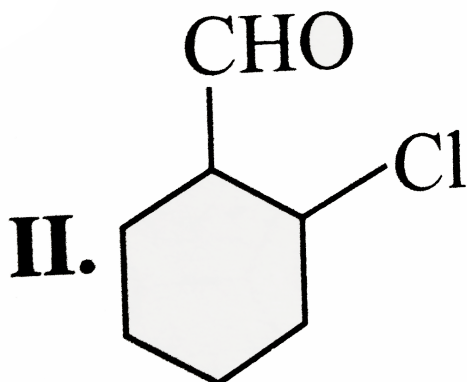
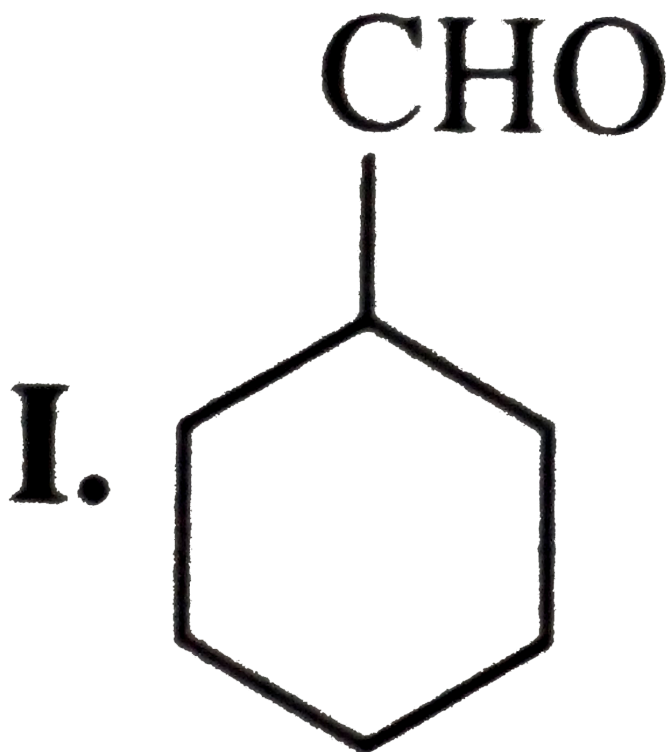
D. 4

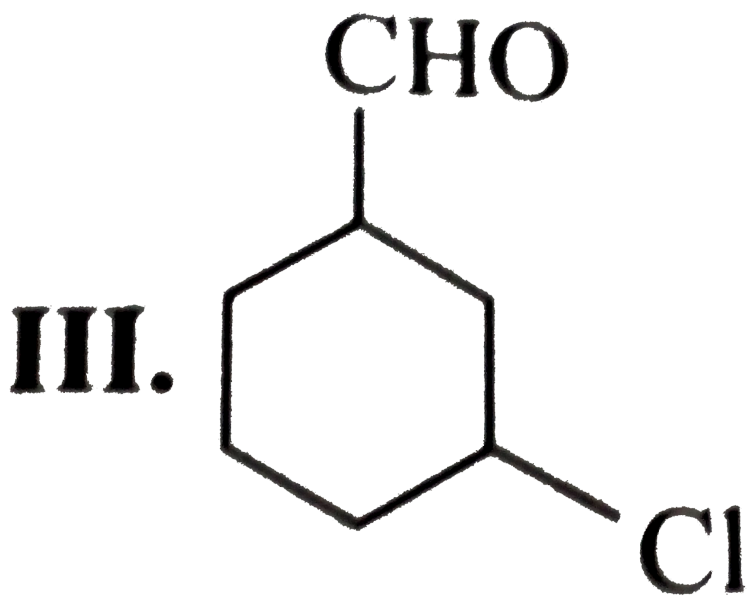
Answer: C



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24. Give decreasing order of the following towards NA reaction.

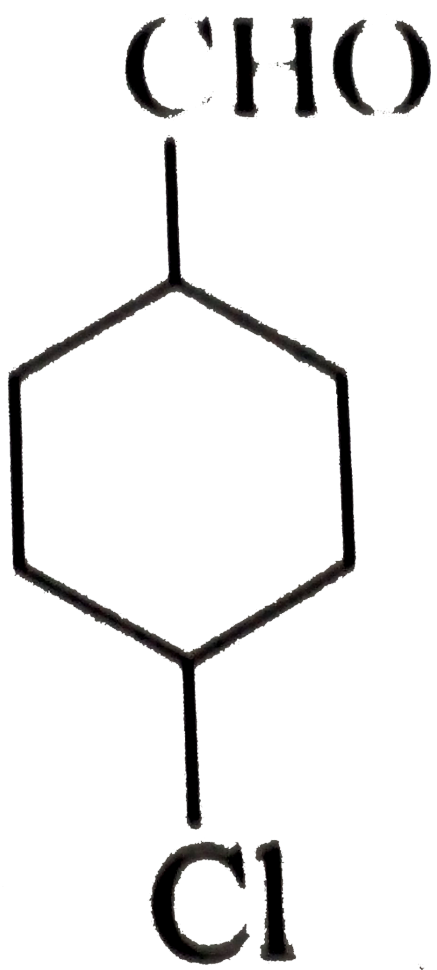




III.

IV.

IV.

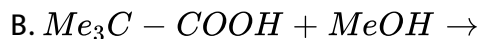


- A. (I) gt (II) gt (III) gt (IV)
- B. (IV) gt (III) gt (II) gt (I)
- C. (II) gt (III) gt (IV) gt (I)
- D. (I) gt (IV) gt (III) gt (II)

Answer: C

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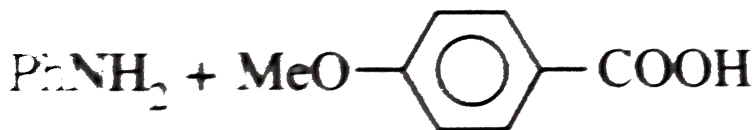
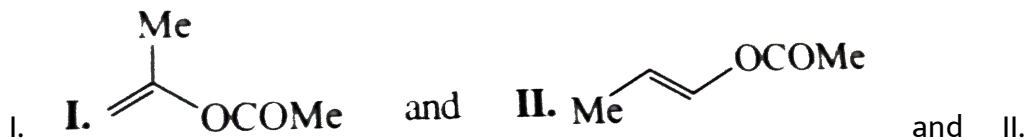
25. Which of the following is the best method for the synthesis of ester (I) ($Me_3C - COOMe$) ?



Answer: C

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26. How will you distinguish the products proucts obtained by acidic hydroysis of



A. Fehing's solution

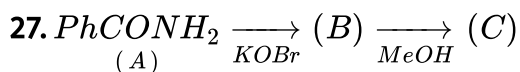
B. NaHSO_3

C. Brady's reagent

D. Lucas test

Answer: A

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Product is (C) is :

A. PhNH_2

B. $PhNHCOOMe$

C. $PhNHCOOPh$

D. None of these

Answer: B

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28. β – Hydroxy propanoic acid on heating gives acrylic acid.

Acrylic acid exists in two diastereomers.

- A. If Both assertion and reason are true reason is a true explanation of the assertion.
- B. If Both assertion and reason are true but the reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: C



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29. Both $HCOOH(I)$ and $CH_3COOH(II)$ give precipitate with aqueous $AgNO_3$ solution soluble in HNO_3 .

$HCOOH$ gives positive Tollens test.

- A. If Both assertion and reason are true reason is a true explanation of the assertion.
- B. If Both assertion and reason are true but the reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: B



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30. Acetic acid on reaction with hydrazoic acid (N_3H) in the presence of H_2SO_4 followed by heating and hydrolysis in basic medium gives acetamide.

Methyl isocyanate ($Me - N = C = O$) is formed is an intermediate compound.

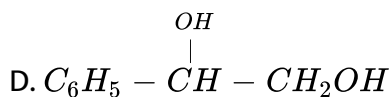
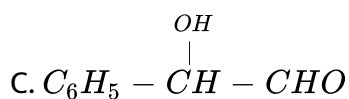
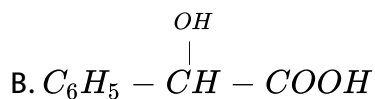
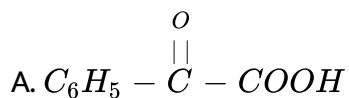
- A. If Both assertion and reason are true reason is a true explanation of the assertion.
- B. If Both assertion and reason are true but the reason is not the correct explanation of the assertion.
- C. If assertion is true but reason is false.
- D. If assertion is false but reason is true.

Answer: D



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1. The major organic product in the following reaction is



Answer: B

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2. Which one of the following undergoes reaction with 50% sodium hydroxide solution to give the corresponding alcohol and acid?

A. Benzoic acid

B. Benzaldehyde

C. Butanal

D. Phenol

Answer: B

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3. The Cannizzaro reaction is not given by

A. Tri methyl acetaldehyde

B. Acetaldehyde

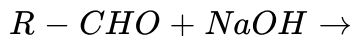
C. Benzaldehyde

D. Formaldehyde

Answer: B

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4. For a Cannizzaro reaction



Rate law is derived as : $Rate = k[RCHO]^2[HO]^{-2}$

from the above rate law, it can be concluded that

- A. hydride donor is a dianion
- B. reaction involved hydride ion transfer
- C. reaction does not show kinetic isotopic effect
- D. reaction is pseudo 2nd order

Answer: A



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5. Trichloroacetaldehyde was subjected to Cannizzaro's reaction by using $NaOH$. The mixture of the other compound. The other compound is

- A. 2, 2, 2- trichloroethanol

B. trichloromethanol

C. 2, 2, 2- trichloroproanol

D. chloroform

Answer: A

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6. m-Chlorobenzaldehyde on reaction with conc. KOH at room temperature gives:

A. potassium m - chlorobenzoate and m - hydroxybenzal - dehyde.

B. m - hydroxybenzaldehyde and m - chlorobenzyl alcohol

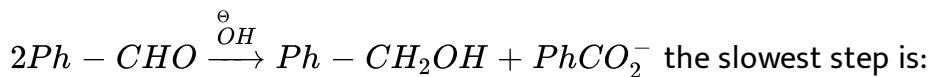
C. m - chlorobenzyl alcohol and m - hydroxybenzyl alcohol

D. potassium m - chlorobenzoate and m - chlorobenzyl alcohol.

Answer: D

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7. In the Cannizzaro reaction given below:

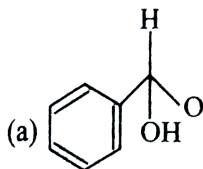


- A. the attack of $\ominus\text{OH}$ at the carbonyl group.
- B. the transfer of hydride to the carbonyl group.
- C. the abstraction of proton from the carboxylic acid.
- D. the deprotonation of PhCH_2OH .

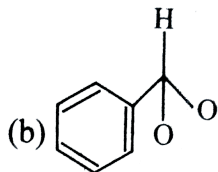
Answer: B

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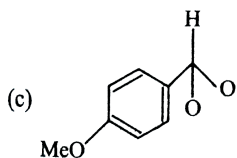
8. In a Cannizzaro reaction the intermediate that will be the best hydride donor is



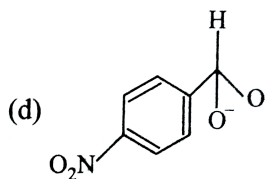
A.



B.



C.

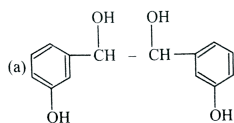


D.

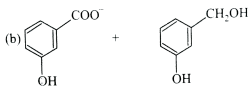
Answer: D

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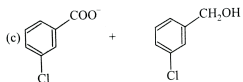
9. Which m-pchlorobenzaldehyde is treated with 50 % *KOH* solution, the product (s) obtained is (are)



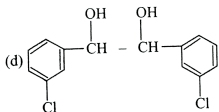
A.



B.



C.



D.

Answer: C

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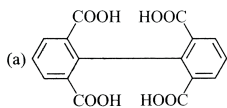
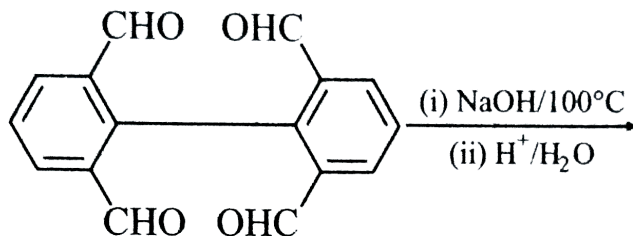
10. A mixture of benzaldehyde and formaldehyde on heating with aqueous NaOH solution gives:

- A. Benzyl alcohol and sodium formate
- B. sodium benzoate and methyl alcohol
- C. sodium benzoate and sodium formate
- D. benzy alcohol and methyl alcohol

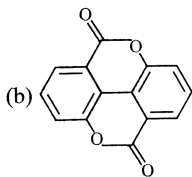
Answer: A

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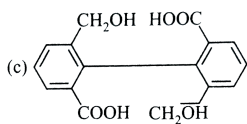
11. Complete the following reaction



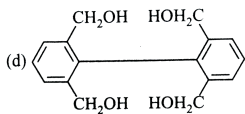
A.



B.



C.



D.

Answer: C

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12. Benzaldehyde + $NaOH \rightarrow$

- A. Benzyl alcohol
- B. Benzoic alcohol
- C. Hydrobenzamide
- D. Cinnamic acid

Answer: A

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13. Benzyl alcohol and sodium benzoate is obtained by the action of sodium hydroxide on benzaldehyde. This reaction is known as

- A. Perkin's reaction
- B. Cannizzaro's reaction
- C. Sandmeyer's reaction
- D. Claisen condensation

Answer: B



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14. If formaldehyde and KOH are heated, then we get

- A. Acetylene
- B. Methane
- C. Methyl alcohol
- D. Ethyl formate

Answer: C



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15. What is the name of reaction when benzaldehyde changes into benzyl alcohol?

- A. Friedel - Crafts reaction
- B. Kolbe's reaction
- C. Wurtz reaction
- D. Cannizzaro reaction

Answer: D



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