CHEMISTRY

BOOKS - MHTCET PREVIOUS YEAR PAPERS AND PRACTICE PAPERS

ALDEHYDES, KETONES AND CARBOXYLIC ACIDS

Exercise 1

1. Which of the following givens an aldehyde on dry distillation ?

A. Calcium formate + calcium acetate

B. Calcium acetate +calcium benzoate

C. Calcium acetate

D. Calcium benzoate

Answer: A

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2. Collin's reagent is used to convert

A. 

B. $-CH_2OH \rightarrow CHO$

C. $-CHO \rightarrow -CHO$

D. $-CHO \rightarrow -CH_2OH$

Answer: B

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3. which of the following on heating with aqueous KOH produces acetaldehyde?

A. CH_3COCl

B. CH_3CH_2Cl

C. CH_2ClCH_2Cl

D. CH_3CHCl_2

Answer: D

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4. The most suitable reagent for the conversoin of primary alcohol into aldehyde with the same number of carbon is

A. acidified $K_2Cr_2O_7$

B. acidified $KMnO_4$

C. alkaline $KMnO_4$

D. pyridinium chlorochromate

Answer: D

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5. Stephen's redcution is used to prepare aldehyde from :

A. alcohol

B. alkyl cyanides

C. alkanones

D. acid chlorides

Answer: B

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6. Which one of the following product is formed when calcium salt of adipic acid is heated ?

A. 

B. 

C. 

D. 

Answer: B

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7. $A + H_2 \xrightarrow{Pd/BaSO_4}$

 A is

A. 

B. 

C. 

D. 

Answer: A

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8. Calcium formate on distillation gives

A. HCOOH

B. CH_3COOH

C. CH_3CHO

D. HCHO

Answer: D

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

A. $Pb/BaSO_4$

B. alkaline $KMnO_4$

C. acidci $KMnO_4$

D. CO+CHl

Answer: D

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

A. pyridinium chlorochromate

B. chromic anhydride in glacial acetic aicd

C. acidic dichromate

D. acidic permanganate

Answer: B

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11. Which of the following, compounds is the reactant in Rosenmund's reduction?

A. CH_3CO_2H

B. CH_3CHO

C. CH_3CH_2Cl

D. CH_3COCl

Answer: D

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12. When ethanal reacts with PCl_5, then product formed is

A. vic-chloride

B. gem-chloride

C. 2, 2 dichlorithanal

D. syn-dichloroethane

Answer: B

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13. Name the reagent used to bring about the following transformation, but-2-ene to ethanol:

A. $K_2Cr_2O_7$ in acidic medium

B. CrO_2Cl_2 / H_3O^+

C. PCC

D. $O_3 / H_2O - Zn$ dust

Answer: D

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14. Which of the following yield 2 moles of formaldehyde on ozonolysis ?

A. $CH \equiv CH$

B. $CH_2 = CH_2$

C. $CH_3 - CH = CH_2$

D. C_6H_6

Answer: B

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15. Acetophenone cannot be prepared easily starting from

A. $C_6H_5CH(OH)CH_3$

B. $C_6H_5CH_3$

C. $C_6H_5C \equiv CH$

D. C_6H_6

Answer: B

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16. $CH_3COCl + H_2 \xrightarrow[\text{Quinoline}]{Pd\,/\,BaSO_4}$

A. acetaldehyde

B. propionaldehyde

C. acteone

D. acetic anhydride

Answer: A

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17. Which of the following is process used for the preparation of acetone?

A. Haber process

B. Wacker process

C. Wolff-Kishner reaction

D. Gattermann-Koch synthesis

Answer: B

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18. Ethyne $+ H_2O \xrightarrow[H_2SO_4]{HgSO_4}$ Product formed in the given reaction is

A. benzaldedyde

B. acetaldehyde

C. ethanoic acid

D. ethanoyl chloride

Answer: B

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19. Match the following names of reagents given in Column II to bring about the conversions given in Column I and choose the correct option from the codes given below.

A. $\begin{matrix} A & B & C \\ 1 & 2 & 3 \end{matrix}$

B. $\begin{matrix} A & B & C \\ 2 & 3 & 1 \end{matrix}$

C. $\begin{matrix} A & B & C \\ 1 & 3 & 2 \end{matrix}$

D. $\begin{matrix} A & B & C \\ 2 & 1 & 3 \end{matrix}$

Answer: C

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20. $Ph - C \equiv C - CH_3 \xrightarrow{Hg^{2+} / H^+} A$, A is

A. 

B. 

C. 

D. 

Answer: A

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21. Silver Miror test is given by which one of the following compounds?

A. Aectaldehyde

B. Acetone

C. Formaldehyde

D. Benzophenone

Answer: A

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22. The reagent with both acetaldehyde and acetone react is

A. Fehling's solution

B. $I_2 / NaOH$

C. Tollen's reagent

D. carbonic acid

Answer: B

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23. Reaction of formadehyde and ammonia gives

A. hexamethylene tetramine

B. bakelite

C. urea

D. triethylene tetramine

Answer: A

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24. Which of the following reactions convert acetone into hydrocarbon having same number of carbon atoms?

A. Wolff-Kishner reduction

B. Hofmann reaction

C. Grignard reaction

D. Reduction with $LiAlH_4$

Answer: A

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25. $CH_3CHO + HCHO \xrightarrow[\text{Heat}]{\text{dil. NaOH}} A \xrightarrow[H_3O^+]{HCN} B$

the structure of compound B is

A. $CH_2 = CH - \underset{\underset{OH}{|}}{CH} - COOH$

B. $CH_2 = CH - \underset{\underset{CN}{|}}{CH} - OH$

C. $CH_2CH_2 - \underset{\underset{OH}{|}}{CH} - COOH$

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

Answer: A

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26. In a reaction RCHO is reduced to RCH_3 usig amalgamated zinc and cencentrated HCl and warming the solution. The reaction is known as

A. Meerwein-Pondorf reaction

B. Clemmensen's reduction

C. Wolff-Kishner reaction

D. Schiff's reaction

Answer: B

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27. Cannizaro reaction is preformed by

A. formaldehyde

B. formaldehyde and acetaldehyde

C. benzaldehyde

D. formaldehyde and benzaldehyde

Answer: D

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28. An organic compound 'X' is oxidised by using acidified $K_2Cr_2O_7$. The product obtained reacts with phenyl hydrazine but does not answer silver mirror test. The possible structure of 'X' is :

A. CH_3CH_2OH

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

C. $(CH_3)_2CHOH$

D. CH_3CHO

Answer: C

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29. Which product is obtained on reduction of methanal in the presence of concentrated NaOH?

A. Formic acid and methyl alcohol

B. $CO + H_2$

C. Methyl alcohol

D. Formic acid

Answer: A

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30. A compound 'X' undergoes reduction with $LiAlH_4$ to yield 'Y'. When vapours of 'Y' are passed over freshly reduced copper at $300^\circ C$, 'X' is

formed. What is 'Y' ?

A. CH_3CH_2OH

B. CH_3CHO

C. CH_3CH_2OH

D. CH_3OCH_3

Answer: C

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31. Predict the product for the reaction below :

A. 

B. 

C. 

D. 

Answer: B

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32. The product obtained in the following reaction is:

A. 

B. 

C. 

D. 

Answer: A

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33. Aldehyde with NH_2NH_2 forms

A. hydrazones

B. aniline

C. nitrobenzene

D. None of these

Answer: A

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34. The end product C in the following sequence of chemical reactions is

$$CH_3COOH \xrightarrow{CaCO_3} A \xrightarrow{\text{Heat}} B \xrightarrow{NH_2OH} C$$

A. acetaldehyde oxime

B. formaldehyde oxime

C. methyl nitrate

D. acetoxime

Answer: D

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35. The reagent used in Clemmensen's reduction is

A. conc. H_2SO_4

B. Zn-Hg/conc. HCl

C. aq. KOH

D. alc.KOH

Answer: B

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

A. hydrazide

B. oxime

C. hydrazine

D. hydrazone

Answer: B

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37. A and B in the following reaction are

$$R - \underset{\underset{O}{||}}{C} - R \xrightarrow[KCN]{HCN} A \xrightarrow{B}$$

A. 

B. 

C. 

D. $A + RR' - CH_2CN, \qquad B = NaOH$

Answer: A

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38. Consider the following reaction,

A. 

B. 

C. 

D. 

Answer: A

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39. Aldol condensation is given by

A. trimethylacetaldehyde

B. acetaldehyde

C. benzaldehyde

D. formaldehyde

Answer: B

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40. Which of the following compound does not react with Fehling's solution?

A. CH_3CHO

B. C_6H_5CHO

C. $C_6H_{12}O_6$

D. HCOOH

Answer: B

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41. On reaction with hydroxylamine, aldehydes produce:

A. ketoxime

B. hydrazone

C. semicarbazone

D. aldoxime

Answer: D

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42. The enol form of acetone after treatment with D_2O gives:

A. $CH_3 - \underset{\underset{OD}{|}}{C} = CH_2$

B. $H_3C - \underset{\underset{O}{||}}{C} - CD_3$

C. $H_2C = \underset{\underset{OH}{||}}{C} - CH_2D$

D. $H_2\_C = \underset{\underset{OH}{||}}{C} - CHD_2$

Answer: A

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43. When acetaldehyde is heateed with Fehling's solution, it gives a red precipitate of :

A. Cu_2O

B. Cu

C. CuO

D. $CuSO_4$

Answer: A

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44. Benedict's solution is not reduced by

A. formaldehyde

B. acetadehyde

C. glucose

D. acetic anhydride

Answer: D

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45. Benzaldehyde on refluxing with aqueous alc. KCN produce

A. cyanobezene

B. cyanohydrin

C. benzoyl cyanide

D. benzoin

Answer: D

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46. Acetaldehyde and acetone can be distinguished by

A. Molisch test

B. Tollen's test

C. Schiff's test

D. lodoform test

Answer: B

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47. Which of the following does not undergo Cannizzaro's reaction ?

A. Benzaldehyde

B. 2-methylpropanal

C. p-methoxybeznaldehyde

D. 2, 2-dimethylpropanal

Answer: D

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48. Identify the organic compound which on heating with strong solution of NaOH, partially converted into an acid salt and partially into alcohol.

A. benzyl alcohol

B. acetaldehyde

C. acetone

D. benzaldehyde

Answer: D

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49. Which of the following is an acetaldoxime?

A. $CH_3CH = N - NH_2$

B. $CH_3CH = N - OH$

C. $(CH_3)_2C = N - OH$

D. $CH_2 = N - OH$

Answer: B

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50. Which of the following reagents can form a hydrazone with alkanone?

A. NH_3OHCl

B. $PhNHNH_2$

C. $NH_2NHCONH_2$

D. HCN

Answer: B

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51. $CH_3CHO \xrightarrow{HCN} (A) \xrightarrow{HOH} (B)$

The product (B) is :

A. malonic acid

B. glycolic acid

C. lactic acid

D. malic acid

Answer: C

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52. $A \xrightarrow{HCl} (CH_3)_2C = CHOCH_3$, A is

A. acetone

B. acetaldehyde

C. propionaldehyde

D. formaldehyde

Answer: A

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53. Which of the following does not react with $NaHSO_3$?

A. CH_3COCH_3

B. CH_3CHO

C. HCHO

D. None of these

Answer: D

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54. Fehling solution is

A. $cuSO_4 +$ lime

B. $CuSO_4 + NaOH(aq)$

C. $CuSO_4 + Na_2CO_3$

D. None of these

Answer: D

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55. $OHC - CHO \xrightarrow{OH^-} HOH_2C - COOH$. The reaction given is

A. Aldol condensation

B. Knoevenagel reaction

C. Cannizaro reaction

D. None of these

Answer: C

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56. Conversion of benzaldehyde to 3-phenylprop-2-en-1-oic aicd is

A. Perkin condensation

B. Claisen condensation

C. Oxidative addition

D. Aldol condensation

Answer: A

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57. The reaction of acetaldehyde with Tollen's reagent gives

A. silver acetate

B. methyl alcohol

C. fomaldehyde

D. acetic acid

Answer: D

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58. Benzyl alcohol can be prepared from benzaldehyde by

A. Friedel-Crafts reaction

B. Cannizaro's reaction

C. Kolbe's reaction

D. Reimer-Tiemann reaction

Answer: B

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59. When benzaldehyde reacts with acetophenone in the presence of sodium hydroxide, then product is

A. $C_6H_5CH = CHCOC_6H_5$

B. $C_6H_5COCH_2C_6H_5$

C. $C_6H_5CH = CHC_6H_5$

D. $C_6H_5CH(OH)COC_6H_5$

Answer: A

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60. The hydrolysis product of $CH_3COOH_3 + CH_3MgBr$ is

A. n-butyl alcohol

B. tertiary butyl alcohol

C. secondary butyl alcohol

D. isopropyl alcohol

Answer: B

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61. The major organic product formed from the following reaction is

A. 

B. 

C. 

D. 

Answer: B

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62. Aldehydes are the first oxidation product of :

A. primary alcohol

B. secondary alcohol

C. tertiary alcohol

D. dihydric alcohol

Answer: A

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63. The product of this reaction is

A. 

B. 

C. 

D. 

Answer: B

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64. C_3H_6O did not give a silver mirror with Tollen's reagent, but gave an oxime with hydroxylamine. It can gove positive

A. iodoform test

B. Fehling's test

C. Schiff's test

D. carbylamine test

Answer: A

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65. To distinguish between 2-pentanone and 3-pentanone which reagent can be used ?

A. $K_2Cr_2O_7 / H_2SO_4$

B. Zn-Hg/HCl

C. SeO_2

D. iodine /NaOH

Answer: D

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66. The aldol condensation of $CH_3 - CHO$ results is the formation of

A. $CH_3 - \underset{\underset{O}{||}}{C} - CH - CH_3$

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

C. $CH_3 - CH_2 - \underset{\underset{OH}{|}}{C}H - \underset{\underset{O}{||}}{CH}$

D. $CH_3 - CH_2OH + CH_3OH$

Answer: B

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67. Which does not react with Fehling's solution?

A. CH_3CHO

B. $C_6H_5 - CH2 - CHO$

C. CH_3COCH_3

D. Glucose

Answer: C

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68. Aectaldehyde reacts with chlorine to give

A. CCl_4

B. $CHCl_3$

C. $CCl_3.COCH_3$

D. $CCl_3.CHO$

Answer: D

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69. Acetylene and HCHO react in presence of copper acetylide catalyst to form:

A. 1-butyne-1,4-diol

B. 2-butyne-1,2-diol

C. 2-butyne-1,4-diol

D. None of the above

Answer: C

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70. $C_6H_5 - CH = CHCHO \xrightarrow{(X)} C_6H_5CH = CH_2OH$

In the above sequence (X) can be:

A. H_2 / Ni

B. $NaBH_4$

C. $K_2Cr_2O_7 / H^+$

D. Both (a) and (b)

Answer: B

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71. Identify X and Y in the following sequence of reactions respectively:

$CH_3CHO \xrightarrow{HNO_3} X \xrightarrow[\Delta]{P_4O_{10}} Y$

A. $C_2H_5OH \qquad C_2H_4$

B. $CH_3CO_2H, \qquad (CH_3CO)_2O$

C. $CH_3CO_2H, \qquad CH_3CO_2CH_3$

D. $C_2H_5OH,$ CH_3CO_2H

Answer: B

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

A. 2, 4-DNP

B. NH_2OH

C. $NaHSO_3$

D. NaOH

Answer: A

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73. Acetaldehyde cannot exhibit

A. Iodoform test

B. Lucas test

C. Benedict test

D. Tollen's test

Answer: B

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74. The compound which reacts with hydroxylamine but does not react with Tollen's reagent is

A. CH_3CHO

B. HCHO

C. C_2H_5OH

D. CH_3COCH_3

Answer: D

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75. Arrange the following compounds in the increasing order of nucleophillic addition reaction:

I. $HCHO$

II. CH_3COCH_3

III. $C_6H_5COCH_3$

IV. $C_6H_5COC_6H_5$

A. $I < II < III < IV$

B. $IV < III < II < I$

C. $IV < II < III < I$

D. $III < IV < II < I$

Answer: B

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76. The compound that gives both iodoform and Fehlings test is :

A. Methanal

B. Ethanol

C. Propane

D. Ethanal

Answer: D

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

A. methane

B. methyl alcohol

C. ethyl formate

D. acetylene

Answer: B

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78. Among H-CHO, CH_3CHO and C_6H_5CHO which will undergo Cannizaro's reaction?

A. $HCHO$ and $CH_3 - CHO$

B. $CH_3 - CHO$ and C_6H_5CHO

C. C_6H_5CHO and $HCHO$

D. All of the above

Answer: C

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79. HCHO was treated with a reagent X. The product formed upon hydrolysis in the presence of an acid gave C_2H_5OH. The reagent X is

A. alcoholic KOH

B. alcoholic KCN

C. CH_3MgI

D. aqueous KOH

Answer: C

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

A. 

B. 

C. 

D. 

Answer: D

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81. In the following reaction the product E is

$$\begin{matrix} CHO \\ | \\ CHO \end{matrix} \xrightarrow[(ii)\,H^+]{(i)\,NaOH} E$$

A. $\begin{matrix} CH_2OH \\ | \\ CHO \end{matrix}$

B. $\begin{matrix} CHO \\ | \\ CO_2H \end{matrix}$

C. $\begin{matrix} CH_2OH \\ | \\ CO_2H \end{matrix}$

D. $\begin{matrix} CO_2H \\ | \\ CO_2H \end{matrix}$

Answer: C

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82. Which of the follwing compound does not react with concentrated alkali to give corresponding alcohol and salt of carboxylic acid ?

A. Trimethyl acetaldehyde

B. Benzaldehyde

C. Dimethyl acetaldehyde

D. Formaldehyde

Answer: C

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

A. $CH_3CO_2CH_3$

B. $CH_3CO_2C_2H_5$

C. $C_6H_5CO_2CH_3$

D. $CH_3CO_2C_6H_5$

Answer: B

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84. Predict the product in the given reaction,

A. 

B. 

C. 

D. 

Answer: C

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85. Self condensation of acetaldehyde in the presence of dilute alkalies gives

A. an acetal

B. an aldol

C. mesitylene

D. propionaldehyde

Answer: B

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86. Ketones react with Mg-Hg over water gives

A. pinacolone

B. pinacols

C. alcohols

D. None of these

Answer: B

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

A. $NaHSO_3$

B. $C_6H_5NHNH_2$

C. NH_2OH

D. $NaOH - I_2$

Answer: A

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88. Cross aldol condensation occurs between

A. two same aldehydes

B. two same ketones

C. two different aldehydes and ketones

D. None of the above

Answer: C

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89. In the reaction

$C_6H_5CHO + (CH_3CO)_2O \xrightarrow{CH_3COONa} A$. Product A is

A. acetaldehyde

B. cinnamic acid

C. β-naphthol

D. phenol

Answer: B

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90. The order of reactivity of phenyl magnesium bromide with the following compounds is

A. $II > III > I$

B. $I > III > II$

C. $II > I > III$

D. All react with the same rate

Answer: C

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91. In the presence of dry HCl gas, CH_3CHO condenses with C_2H_5OH to give

A. aldol

B. ethyl acetate

C. acetal

D. polymer

Answer: C

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92. Both $HCHO$ and CH_3CHO give simila reactions with all the reagents except

A. Schiff's reagent

B. Fehling solution

C. ammoniacal $AgNO_3$

D. polymer

Answer: D

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93. The reagent which does not react with both acetone and benzaldehyde is

A. Sodium hydrogensulphite

B. Phenyl hydrazine

C. Fehling's solution

D. Grignard reagent

Answer: C

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94. The compound that neither forms semicarbazone nor oxime is

A. HCHO

B. $CH_3CONHCH_3$

C. CH_3COCH_2Cl

D. $CH_3\underset{\underset{CH_3}{|}}{C}HCHO$

Answer: B

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95. Which of the following conversion can be carried out by Clemmensen reduction ?

A. Benzaldehyde into benzly alcohol

B. Cyclohexanone into cyclohexane

C. Benzoyl chloride into benzaldehyde

D. Benzophenone into diphenyl ethanal

Answer: B

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96. The methanol, ethanal and propanone are miscible with water because they form

A. van der Waals' forces with water

B. hydrogen bond with water

C. dipole-dipole bond with water

D. ion-dipole bond with water

Answer: B

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97. Which of the following statements are correct for aldehydes and ketones?

A. They are soluble in organic solvents like benzene, ether, methanal, choloroform etc

B. Their solubility in water decreases rapidly on increasing the length of the alkyl chain

C. They are used in the blending of perfurmes and flavouring agents

D. All of the above

Answer: D

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98. Study the mechanism given below carefully,

Select the correct statement(s) for the above diagram from the options given below.

A. A nucleophile attacks the electrophilic carbon of the non-polar carbonyl group from direction perpendicular carbon

B. The hybridisation of carbon changes from sp to sp^2 in this process

C. The net result is the addition of $Nu^{\ominus}$ and $H^{\oplus}$ across the carbon oxygen double bond

D. Both (a) and (c)

Answer: C

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99.

Z=Alkyl, aryl, OH, NH_2, C_6H_5NH, $NHCONH_2$,

Which of the following statement(s) is/are true about the above given reaction?

A. Nucleophiles, such as NH_3 and its derivatives H_2N-Z add to the carbonyl group of aldehysed by acid

B. The reaction is reversible and catalysed by acid

C. The equilibrium favours the product formation due to rapid deydration of the intermediate to form

D. All of the above

Answer: D

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100. Which reaction is suitable for the preparation of α-chloroacetic acid?

A. Hell-Volhard-Zelinsky reaction

B. No reaction

C. Stephen's reaction

D. Perkin condensation

Answer: A

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101. $CH_3COOH \xrightarrow{Br_2/P} Y \xrightarrow[(i)\,H_3O^+]{(i)\,KCN} X$ Here, X is

A. glycolic acid

B. α-hydroxy propionic acid

C. succinic acid

D. malonic acid

Answer: D

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102. 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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103. Which of the following represents the correct order of the acidic strength in the given compounds ?

A.

$$CH_3COOH > BrCH_2COOH > ClCH_2COOH > FCH_2COOH$$

B. $FCH_2COOH > CH_3COOH > BrCOOH > ClCH_2COOH$

C.

$$BrCH_2COOH > ClCH_2COOH > FCH_2COOH > CH_3COOH$$

D.

$$FCH_2COOH > ClCH_2COOH > BrCH_2COOH > CH_3COOH$$

Answer: D

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104.  $\xrightarrow{CF_3COOH} X$ Identify X

A. 

B. 

C. 

D. 

Answer: C

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105.  $\xrightarrow{H_3O^+} A \xrightarrow{\Delta} B$

The compound B is

A. 

B. 

C. 

D. 

Answer: A

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106. When sodium formate is heated with soda lime, it forms:

A. CO

B. CO_2

C. hydrogen

D. water vapour

Answer: C

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107. In the reaction,

$$R - X \xrightarrow{\text{Alcoholic KCN}} A \xrightarrow{\text{Dil. HCl}} B$$

The product B is

A. alkyl cholride

B. aldehyde

C. carboxylic acids

D. ketone

Answer: C

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108. An alkyl amine is prepared by the following reaction-

$$RCOOH + N_3H \xrightarrow{\text{Conc.}\, H_2So_4} RNH_2 + C0_2 + N_2$$

Name of the above reaction is:

A. Lossen reaction

B. Schmidt reaction

C. Curtius reaction

D. Ulmann reaction

Answer: B

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109. Role of 2,4-dichlorophenoxy acetic acid is used as

A. fungicide

B. insecticide

C. herbicide

D. moth repellant

Answer: C

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110. When $CH_2 = CH - COOH$ is reduced with $LiAlH_4$ the compound obtained will be

A. $CH_3 - CH_2 - COOH$

B. $CH_2 = CH - CH_2OH$

C. $CH_3CH_2CH_2OH$

D. CH_3CH_2CHO

Answer: B

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111. Given below are some statement concerning formic acid, which of them is/are true?

A. It is weaker acid than acetic acid

B. It is a reducing agent

C. When its calcium salt is heated, it forms a ketone

D. It is an oxidising agent

Answer: B

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112. Acetic acid reacts with PCl_5 to form

A. $CH_2ClCOOH$

B. $CHCl_2COOH$

C. CH_2COCl

D. CH_3COOCl

Answer: C

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113. The acid which contains the aldehyde group is

A. acetic acid

B. formic acid

C. benzoic acid

D. propionic acid

Answer: B

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114. Propionic acid and KOH reacts to produce which one of the folliwng?

A. Potassium propionate

B. Propyl alcohol

C. Propionaldehyde

D. Does not react

Answer: A

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115. Which CH_3COOH reacts with $CH_3 - MgX$, then

A. CH_3COX is formed

B. Hydrocarbon is formed

C. Acetone is formed

D. Alcohol is formed

Answer: B

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116. Which reagent can convert accetic acid into ethanol?

A. Na+ alcohol

B. $LiAlH_4$ + ether

C. $H_2 + Pt$

D. Sn+HCl

Answer: B

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117. Complete the following reaction $RCOOH \xrightarrow[\Delta]{P_2O_5}$

A. acid anhydride

B. ketone

C. adehyde

D. ester

Answer: A

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118. The Hell-Volhard-Zelinsky reaction is used for preparing

A. β-halo acid

B. λ-halo acid

C. α- halo acid

D. acid halide

Answer: C

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119. 4-Methyl benzene sulphoic acid reacts with sodium acetate to give :

A. 

B. 

C. 

D. 

Answer: A

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120. Which of the following compounds would have the smallest value of pK_a?

A. $CHF_2CH_2CH_2COOH$

B. $CH_3CH_2CF_2COOH$

C. $CH_2FCHFCH_2COOH$

D. $CH_3CF_2CH_2COOH$

Answer: B

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121. When of the following compounds would have the smallest value of pK_a?

A. benzoyl chloride

B. o-chlorobenzoic acid

C. p-chlorobenzoic acid

D. benzyl chloride

Answer: A

View Text Solution

122. What is the product in the reaction

$$CH_3MgBr \xrightarrow[(ii)\,H_2O]{(i)\,CO_2} X$$

A. Acetaldehyde

B. Acetic acid

C. Formic acid

D. Formaldehyde

Answer: B

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123. Which one is the correct statement ?

A. o-nitrobenzoic acid is stronger than 3,5-dinitrobenzoic acid in H_2O

B. Branched carboxylic acids are more acidic than unbranched acids

C. 

D. Butanoic acid is stronger acid than succine acid

Answer: A

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124. Oxalic acid on treatment with conc. H_2SO_4 gives

A. only CO

B. only CO_2

C. $CO_2 + H_2O$

D. $CO + CO_2 + H_2O$

Answer: D

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125.

$$CH_3CH_2 - CH_2 - COOH \xrightarrow{\text{Red} + \text{P} + Br_2} CH_3 - CH_2 - \underset{\underset{Br}{|}}{CH} - COOH$$

This reaction is called

A. Remier-Tiemann reaction

B. Hell-Volhard-Zelinsky reacton

C. Cannizaro reaction

D. Sandmeyer's reaction

Answer: B

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126. In an anion $HCOO^-$ the two carbon-oxygen bonds are found to be equal length. What is the reason for it?

A. The anion is obtained by the removal of a proton from the acid molecules

B. Electronic orbitals of carbon atoms are hybridised

C. The C=O bons is weakar than C-O bond

D. The anion $HCOO^-$ has two resonating structures

Answer: D

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127. $RCOOH \xleftarrow{H_3O^+} X \xrightarrow{4[H]} RCH_2NH_2$

A. Alkane

B. Alkyl isonitrile

C. Aldoxime

D. Alkane nitrile

Answer: D

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128. The correct order of increasing acidity of the followins is :

A. $HCN > ClCH_2COOH > HCOOH > CH_3COOH$

B. $HCN > HCOOH > ClCH_2COOH > CH_3COOH$

C. $ClCH_2COH > HCOOH > CH_3COOHC > HCN$

D. $ClCH_2COOH > JCl > HCOOH > CH_3COOH$

Answer: B

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129. $X \xrightarrow{PCl_5} C_2H_5Cl, Y \xrightarrow{PCl_5} CH_3COCl$, X and Y are :

A. $(C_2H_5)O$ and CH_3CO_2H

B. C_2H_5l and C_2H_5CHO

C. C_2H_5OH and CH_3CO_2H

D. C_2H_2OH and C_2H_5CHO

Answer: C

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130. Identify Z in the following sequence of reaction.

$CH_3COOH \xrightarrow{NH_3} X \xrightarrow{\Delta} Y \xrightarrow{P_2O_5} Z$

A. CH_4

B. CH_3CHO

C. CH_3CN

D. $CH_3COO^-NH_4^+$

Answer: C

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131. The acidic nature of the carboxylic acids is due to:

A. high degree of ionisation of carboxylic acids

B. greater reasonance stabilisation of the carboxylic acid over the carboxylate ion

C. greater reasonance stabilisation of the carboxylatee ion over carboxylic acid

D. solubility of carboxylic acids in water

Answer: C

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132. the carboxylic acid of least strenght among the following is

A. p-nitrobenzoic acid

B. p-methylobenzoic acid

C. p-chlorobenzoic acid

D. p-methyloxybenzoic acid

Answer: D

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133. In the following sequence of reaction, find the product Y.

A. 

B. 

C. 

D. 

Answer: C

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134. Consider the following reaction,

A. 

B. 

C. 

D. None of these

Answer: A

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135. Which of the following diacid readily gives anhybride on heating ?

A. Fumaric acid

B. Maleic acid

C. Phthalic acid

D. Terephthalic acid

Answer: B

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136. Corrosive sublimate, $HgCl_2$ can be used to distinguish between

A. formic acid and acetic acid

B. acetaldehyde and butanone

C. formaldehyde and propanone

D. All of the above

Answer: D

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137. Which of the following does not give benzoic acid on hydrolysis?

A. Phenyl cyanide

B. Benzoyl chloride

C. Benzyl chloride

D. Methy benzoate

Answer: C

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138. CH_3COOH is weaker acid than H_2SO_4. It is due to

A. more ionisation

B. less ionisation

C. covalent bond

D. electrovalent bond

Answer: B

Watch Video Solution

139. Acetic acid be obtained on oxidation of

A. ethanol

B. propanal

C. methanal

D. glyoxal

Answer: A

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140. A carboxylic acid is converted into its anhybride using

A. thionly chloride

B. sulphur chloride

C. sulphuric

D. phosphorus pentoxide

Answer: D

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141. Among the following the strongest acid is

A. CH_3COOH

B. c_6H_5COOH

C. $m - CH_3OC_6H_4COOH$

D. $p - CH_3 - OC_6H_4COOH$

Answer: B

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142. Benzoic acid with $Ba(OH)_2$ gives

A. barium benzoate

B. Benzaldehyde

C. benzene

D. toluene

Answer: C

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143. CH_3COOH is formed by hydrolysis

A. CH_3NH_2

B. CH_3CN

C. CH_3CH_2CN

D. $CH_3CH_2NH_2$

Answer: B

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144. Benzoic acid when heated with soda lime yields

A. benzaldehyde

B. benzene

C. toluene

D. benzyla alcohol

Answer: B

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145. Which one of the following compounds forms a red coloured solution on treatement with neutral $FeCl_3$ solution ?

A. CH_3COOCH_3

B. CH_3OCH_3

C. CH_3CH_2OH

D. CH_3COOH

Answer: D

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146. Hydrolysis of an ester gives a carboxylic acid which on Kolbe's electrolysis yields ethane. The ester is

A. methyl methanoate

B. methyl ethanoate

C. methyl propionate

D. None of these

Answer: B

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147. In the following reaction ,

$CH_3COO + X \xrightarrow{\text{Conc. } H_2SO_4} Y + CO_2 + N_2$. X and Y respectively are

A. HN_3 and CH_3NH_2

B. NH_3 and CH_3CONH_2

C. NH_3 and CH_3NH_2

D. NH_3 and CH_3CONH_2

Answer: A

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148. In the following reaction,

$$R - CH_2 \xrightarrow{Br_2 / p} X \xrightarrow{\text{Excess} NH_3} Y$$

the major amounts of X and Y are:

A. $RCHBrCONH_2, RCH(NH_2)COOH$

B. $RCHBrCONH, RCH(NH_2)COOH$

C. RCH_2COBr, RCH_2COONH_4

D. $RCHBrCOOH, RCH_2CONH_2$

Answer: B

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149. The propery which distinguishes fomric acid from acetic acid is

A. only ammonium salt of formic acid on heating gives amide

B. when heated with $\text{alcohol} / H_2SO_4$, only acetic acid fomrs ester

C. only acetic forms salts with alkali

D. only formic reduces Fehling's solution

Answer: D

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

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

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

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

Answer: D

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151. $CH_3COOH \xrightarrow{LiAlH_4} (A), (A) + CH_3COOH \xrightarrow{H_3O^+} (B) + H_2O$. In the above reaction 'A' and 'B' respectively are :

A. $CH_3COOC_2H_5, C_2H_2OH$

B. CH_3CHO, C_2CHO

C. `C_(2)H_(5)OH, CH_(3)CHO

D. $C_2H_5OH, CH_3COOC_2H_5$

Answer: D

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152. Which of the following reagent can carry out the converstion.

$CH_3(CH_2)_8CH_2OH \rightarrow CH_3(CH_2)_8COOH$

A. $KMnO_4$ in acidic, neutral, alkaline media

B. $K_2Cr_2O_7$ in acidic media

C. CrO_3 in acidic media

D. All of the above

Answer: D

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153. In the reaction,

$$R - X \xrightarrow{\text{Alcoholic KCN}} A \xrightarrow{\text{Dil. HCl}} B$$

The product B is

A. alkyl cholride

B. aldehyde

C. carboxylic acids

D. ketone

Answer: C

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154. Select the said (S) which cannot be prepared by Grignard reagent.

A. acetic acid

B. succine acid

C. Formic acid

D. All of these

Answer: C

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155. What is the product in the reaction

$$CH_3MgBr \xrightarrow[(ii)\,H_2O]{(i)\,CO_2} X$$

A. acetaldehyde

B. Acetic acid

C. Formic acid

D. Formaldehyde

Answer: B

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156. Higher carboxylic acids are insoluble in water due to

A. increased hydrophobic interaction of the hydrocarbon part

B. decreased hydropophobic interaction of the hydrocaarbon part

C. Both (a) and (b)

D. None of the above

Answer: A

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157. Select the incorrect match.

A. pK_a values $< 1 \rightarrow$ strong acids

B. pK_a values between 1 and 5 $14 \rightarrow$ moderately strongacids

C. pK_a values between 5 and $14 \rightarrow$ weak acids

D. pK_a values $> 14 \rightarrow$ extermely strong acids

Answer: D

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158. Which of the reagents(s) is/are used for the conversion of ehtanoic acid to ethanoic anhydride ?

A. $SOCl_2\Delta$

B. $PCl_3\Delta$

C. $P_2O_5\Delta$

D. All of these

Answer: C

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159. The esterification of carboxylic acids with alcohols is a kind of

A. electrophilic acyl substituation

B. nucleophilic acyl subsitutaion

C. electrophilic acyl addition

D. nucleophilic acyl addition

Answer: B

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160. Consider the following reaction ,

$I.\ RCOOH + PCl_5 \rightarrow RCOOCl + POCl_3 + CHl$

$II.\ 3RCOOH + PCl_5 \rightarrow 3RCOCl + H_3PO_3$

$III.\ RCOOH + SOCl_2 \rightarrow RCOCl + SO_2 + HCl$

Which of the abvoe reaction (s) is/are preferred for the synthesis of RCOCl ?

A. only I

B. Only II

C. Only III

D. All of these

Answer: C

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161. What is the by product fomred in this reaction

$$R - \overset{-}{C}OO\overset{+}{N}a \xrightarrow[\Delta]{NaOH\,.CaO} R - H + ?$$

A. $NaCHO_3$

B. CO_2

C. Na_2HCO_3

D. Na_2CO_3

Answer: D

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162. Arrange the following acids in the decreasing order of the acidic strenght.

A. $HC \equiv C - COOH$

B. C_6H_5COOH

C. $CH_2 = CH - COOH$

D. CH_3COOH

Answer: A

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163. Complete the systhesis by giving the missing product.

A. 

B. 

C. 

D. 

Answer: B

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164. When salicylic acid is distilled with zinc dust, the product obtaiend is

A. zince salicylate

B. salicyladehyde

C. phenol

D. benzoic acid

Answer: D

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165. The main product obtained in the reaction of acetamide and HNO_2 is

A. HCOOH

B. CH_3COOH

C. CH_3CH_2COOH

D. $CH_3CH_2CH_2COOH$

Answer: A

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166. In the

A. CH_3CN

B. CH_3NC

C. CH_3NH_2

D. CH_3COOH

Answer: D

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167. In the reaction

$$CH_3COOH \xrightarrow{LiAlH_4} A \xrightarrow{PCl_5} B \xrightarrow{Alc.KOH} C$$

The product C is

A. acetaldehyde

B. acetylene

C. ethylene

D. acetyl chloride

Answer: C

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168. Among the following compounds, the one (s) that gives (gives) effervescence with aqueous $NaHCO_3$ solution is (are) :

(I) $(CH_3CO)_2O$, (II) CH_3COOH

(III) $PhOH$, (IV) CH_3COCHO

A. I and II

B. I and III

C. Only III

D. I and IV

Answer: A

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169. Which of the following acid reduces Tollen's reagent?

A. Formci acid

B. Acetic acid

C. lactic acid

D. Oxalic acid

Answer: A

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170. Which of the following reagent/solution can be used to distinguish between methanoic acid and ethanoic acid?

A. Tolle's reagent

B. $FeCl_3$ solution

C. $NaOH$ solution

D. $NaCO_3$ solution

Answer: A

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Exercise 2

1. Which reactio is used for the preparation of acetophenone ?

A. Remier-Tiemann reaction

B. Wurtz-Fitting reaction

C. Friedel-Crafts reaction

D. Cannizaro's reaction

Answer: C

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2. The most reactive compound towards formation of cyanohydrin on treatment with KCN followed by acidification is

A. benaldehyde

B. p-nitrobenzaldehyde

C. phenylacetaldehyde

D. p-hydroxybenzaldehyde

Answer: B

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3. Identify the reaction which is used to obtian $\beta -$ hydroxy ketone ?

A. Condensation reaction

B. Aldol condensation

C. Cross aldol condensation

D. Cannizaro's reaction

Answer: B

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4. Which of the following compounds would be the main product of an aldol condensation of acetaldehyde and acetone ?

A. $CH_3CH = CH \cdot CHO$

B. $CH_3CH = CHCOCH_3$

C. $(CH_3)_2C = CH \cdot CHO$

D. $(CH_3)_2C = CHCOCH_3$

Answer: B

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5. An organic compound of molecular formula C_3H_5O did not give a silver mirror with Tollen's reagent, but gave an oxime with hydroxylamine,

it may be

A. $CH_3 - CO - CH_3$

B. C_2H_5CHO

C. $CH_2 = CH - CH_2 - OH$

D. $CH_3 - O - CH = CH_2$

Answer: A

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6. The product formed in the aldol condensation of acetaldehyde is

A. $CH_3CH_2CH(OH)CHO$

B. $CH_3CH(OH)CH_2CHO$

C. $CH_3CH(OH)COCH_3$

D. $CH_3CH_2CH_2CHO$

Answer: B

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7. Acetone on addition to methyl magnesium bromide froms a complex, which on decomposition with acid gives X and $Mg(OH)Br$. Which one of the following is X?

A. CH_3OH

B. $(CH_3)_3COH$

C. $(CH_3)_2CHOH$

D. CH_3CH_2OH

Answer: B

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8. Which of the following is an example of aldol condensation?

A. $2CH_3COCH_3 \xrightarrow{\text{Dil. } NaOH} (CH_3)(2)OH\Big)CH_2COCH_3$

B. $2HCHO \xrightarrow{\text{Dil. } NaOH} CH_3OH$

C. $C_6H_5CHO + HCHO \xrightarrow{Di.NaOH} C_6H_5CH_2OH$

D. None of above

Answer: A

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9. The product fomred in the reaction

A. 

B. 

C. 

D. None of these

Answer: B

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10. An organic compound X gives a red precipitate on heating with Fehling's solution. Which one of the following reactions yields X as a major product ?

A. $HCHO \xrightarrow[(ii)\, H_2O]{(i)\, CH_3Mgl}$

B. $C_2H_5Br + AgOH \xrightarrow{\Delta}$

C. $2C_2H_2Br + Ag_2O\Delta$

D. $C_2H_2 + H_2O \xrightarrow[1\,\%\, HgSO_4\,, 60^C]{40\,\%\, H_2SO_4}$

Answer: D

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11. which of the following converts carbonyl compounds into hydrocarbons ?

A. H_2 / Pt

B. $LiAlH_4$

C. $K_2Cr_2O_7 / H_2SO_4$

D. $Zn - Hg / HCl$

Answer: D

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12. The end prduct in the Cannizaro's reaction of benzaldehyde is

A. $PhC\overset{-}{O}O\overset{+}{N}a, PhCH_2OH$

B. $PHCO\overset{-}{O}\overset{+}{a}H, PhCH_2CO_2H$

C. $PhCH_2OH, PhCOCH_3$

D. $PhCOO\overset{-}{\overset{+}{N}}a, PhCOCH_3$

Answer: A

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

A. Tollen's reagent

B. Fehling solution

C. $NaOH / l_2 / H^+$

D. $NaOH / Nal / H^+$

Answer: C

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14. The acetophenone can be converted to eehtylbezene by reaction with $LiAlH_4$

A. $LiAlH_4$

B. H_2NOH

C. $Pd / BaSO_4 - H_2$

D. $Zn - Hg / conc.\ HCl$

Answer: D

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15. Arrange the following compounds in the increasing order of their boiling points:

$CH_3CH_2CH_2CHO, CH_3CH_2CH_2CH_2OH, H_5C_2 - O - C_2H_5, CH_3CH_2$

A. $IV < I < II < III$

B. $IV < III < II < I$

C. $IV < III < I < II$

D. $IV < II < III < I$

Answer: C

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16. The conversion of acetophenone to acetanilide is best accompanied by using :

A. Backmann nearrangement

B. Curtius rearrangment

C. Looses rearrangement

D. Hofmann rerrangement

Answer: A

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17. Bezaldehyde gives a positive test with

A. Tollen's reagent

B. Fehling solution

C. Benedict test's

D. All of these

Answer: A

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18. Acetaldehyde form a white crystalline precipitate mixing with a solution of

A. acidic , $KMnO_4$

B. alcoholic , Na_2SO_3

C. saturated aqueous $NaHSO_3$

D. aqeous. NaCl

Answer: C

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19. The product formed during Hell-Volhard-Zelinsky reaction is

A. $R - \underset{\underset{X}{|}}{CH} - COOH$

B. $R - CH_2 - COX$

C. $R - \underset{\underset{X}{|}}{C} - COOH$

D. $R - \underset{\underset{X}{|}}{CH} - CH_2 - COOH$

Answer: A

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

A. $HCHO$

B. CH_3CHO

C. C_6H_5CHO

D. CH_3COCH_3

Answer: B

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21. Benzaldehyde condense with acetaldehyde to produce

A. cinnamic acid

B. benzoic acid

C. cinnamaldehyde

D. acetic anhydride

Answer: C

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22. The correct order for the acidic strength of thhe following compounds is

I. CH_3COOH II. $MeOCH_2COOH$

III. CF_3COOH IV. $Me_2CHCOOH$

A. $(ii) < (iv) < (i) < (iii)$

B. $(iv) < (i) < (iii) < (ii)$

C. $(iv) < (i) < (ii) < (iii)$

D. $(i) < (iv) < (iii) < (ii)$

Answer: C

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

A. PCl_5

B. Cl_2

C. $SOCl_2$

D. PCl_5

Answer: B

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24. Among the following , the most acicid is

A. CH_3COOH

B. $ClCH_2COOH$

C. $Cl_2CHCOOH$

D. Cl_2CHCH_2COOH

Answer: C

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25. Among the following, which compound is most acidic ?

A. CH_3CH_2COOH

B. $(CH_3)_2CH-COOH$

C. $HCOOH$

D. CH_3COOH

Answer: C

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26. Colouration of Br_2 / CCl_4 will be discharged by

A. cinnamic acid

B. benzoic acid

C. o-phthalic acid

D. acetopenone

Answer: A

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27. Which of the following product is fomred in the reaction

$$CH_3MgBr \xrightarrow[(ii)\,H_2O]{(i)\,CO_2} ?$$

A. acetic acid

B. Methanoic acid

C. Methanol

D. Ethanal

Answer: A

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28. Cinnamci acid is fomed when $C_6H_5 - CHO$ condenses with $(CH_3CO_2)O$ in the presence of

A. concentreated H_2SO_4

B. sodium acetate

C. sodium metal

D. anhydrous $ZnCl_2$

Answer: B

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29. Which of the reagents (s) is/are responsible for the conversion of toluene directly to benzaldehyde ?

A. $KMnO_4 / OH^-$

B. $CrO_3 / (CH_3CO)_2O$

C. CrO_2Cl_2 / CS_2

D. Both (b) and (c)

Answer: D

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30. The most suitable reagent A, for the reaction is/are

A. O_3

B. H_2O_2

C. $NaOH - H_2O_2$

D. m-chloroperbenzoic acid

Answer: D

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31. Name the product formed during the decarboxylation of malonic acid.

A. acetic acid

B. Ethannone

C. Propanone

D. Formic acid

Answer: A

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32. The refluxing of $(CH_3)_2NCOCH_3$ with acid gives

A. $(CH_3)_2NH + CH_3COOH$

B. $(CH_3)NCOOH + CH_4$

C. $2CH_3OH + CH_3CONH_2$

D. $2CH_3NH_2 + CH_3COOH$

Answer: A

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33. Match the reactions given in Column I with the suitable reagents given in Column II and choose the correct option from the given below.

A. $\begin{matrix} A & B & C & D \\ 3 & 4 & 1 & 2 \end{matrix}$

B. $\begin{matrix} A & B & C & D \\ 1 & 2 & 3 & 4 \end{matrix}$

C. $\begin{matrix} A & B & C & D \\ 3 & 1 & 4 & 2 \end{matrix}$

D. $\begin{matrix} A & B & C & D \\ 3 & 2 & 1 & 4 \end{matrix}$

Answer: A

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34. Which of the following will be most readily dehydrate under acidic condition ?

A. 

B. 

C. 

D. 

Answer: A

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35. At room temperature, formaldehyde changed to

A. paraldehyde

B. hexose

C. trioxane which does reduce Tollen's reagent

D. None of the above

Answer: C

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36. Amide on heating with P_2O_5 gives

A. amine

B. nitrile

C. aldehyde

D. ketone

Answer: B

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37. Identify the compounds A with correct name formed in the given reaction.

A. 

B. 

C. 

D. 

Answer: D

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38. Benzophenone can be obtained by

I. Benzoyl chloride +Benzene+$AlCl_3$

II. Benzoyl chloride + Diphenyl cadmium ltbr. III. Benzoyl chloride+Phenyl magnesium chloride ltbr. IV. Benzene+ Carbon monoxide+ $ZnCl_2$

Select an appropirate option

A. I and II

B. II and III

C. III and IV

D. IV and I

Answer: A

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39. $CH_3C \equiv CH \xrightarrow[1\%\, HgSO_4]{40\%\, H_2SO_4} A \xrightarrow{\text{Isomeristion}} CH_3 - \underset{\underset{O}{||}}{C} - CH_3$

Structure of A and type of isomerism in the above reaction respectively are

A. prop-1-en-2-ol, metamerism

B. prop-1-en-1-ol, metamerism

C. prop-2-en-2-ol, tautomerism

D. prop-1-en-2-ol, tautomerism

Answer: D

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40. Reagents (s) used for the reduction of aldehydes and ketones are

A. $LiAlH_4$

B. $NaBH_4$

C. Catalytic hydrogenation

D. All of these

Answer: D

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41. 

The above reaction is known as

A. Wolff-Kishner reactions

B. Clemmensen's reduction

C. Both (a) and (b)

D. None of these

Answer: A

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42. Which of the reagent (s)is/are used in the given reaction

$''RHCO \rightarrow RCOOH''$

A. Nitric acid

B. Potassium dichromate

C. Tollen's reagent

D. All of the above

Answer: D

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43. Which of the following statements (s) is/ are correct ?

A. Ketones are generally oxidised under vigorous conditions

B. ldehydes are easily oxidised to carboxylic acids even under mild oxidising agents

C. Oxidation ketone involes carbon-carbon bond cleaveage to give a mixture of carboxylic acids having lesser number of carbon atoms than the parent ketones

D. All of the above

Answer: D

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44. Which type of reaction (s) is/are involved in the Cannizaro reaction ?

A. Reduction

B. Oxidation

C. Both (a) and (b)

D. None of these

Answer: C

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45. Which of the following compounds is the most reactive nucleophilic addtion reaction ?

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

B. $CH_3 - \overset{\overset{O}{||}}{C} - H_3$

C. 

D. 

Answer: A

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46. Which of the following statements is correct regarding the reactivity of benzaldehyde and propanal ?

A. Benzaldehyde less reactive in electrophilic addition reactions than propanal

B. Benzaldehyde more reactive in electrophilic addition reactions than propanal

C. Benzaldehyde less reactive in nucleophilic addition reactions than propanal

D. Benzaldehyde equally reactive in nucleophilic addition reactions than propanal

Answer: C

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47. Arrange the following carbonyl compounds in increasing order of their reactivity nucleophlic addtion reactino.

A. Butanone $<$ propanae $<$ propanal $<$ ethanal

B. Butanone $<$ propanal $<$ propanone $<$ ethanal

C. Butanone $<$ ethanal $<$ propanone $<$ propanal

D. Butanone $< ethanal$lt $\propto anal$lt` propanone

Answer: A

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48. The acidic strength of active methylene group in

I. $CH_3COCH_2COOH_2H_5$

II. $CH_3COCH_2COOH_3$

III. $C_2H_5OOCCH_2COOC_2H_5$

A. $I > III > II$

B. $I > II > III$

C. $II > I > III$

D. $III > I > II$

Answer: C

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49. $C_6H_5COOH \xrightarrow[(ii)\ \Delta]{(i)\ NH_3} 'p' \xrightarrow{NaOBr} 'Q' \xrightarrow[(ii)\ \text{heat to } 460\ \text{K}]{(i)\ conc.\ H_2SO_4} 'R'$

The product 'R' is :

A. o-bromo sulphanilic acid

B. sulphanilamide

C. sulphanilic acid

D. p-bromo sulphanilamide

Answer: C

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50. Which of the following is the correct order of acidic strength ?

A.

$$Cl \cdot C \cdot COOH < Cl_2CH \cdot COOH > Cl \cdot CH_2COOH > CH_3COO$$

B.

$$CH_3COOH > ClCH_2CIOOH > Cl_2CHOOH > Cl \cdot C \cdot COOH$$

C.

$$CH_3COOH > Cl_3 \cdot C \cdot COOH > Cl_2CH \cdot COOH > Cl \cdot CH_2 \cdot C$$

D.

$$CH_3COOH > Cl_2 \cdot CH \cdot COOH > ClCH_2COOH > Cl_3 \cdot C \cdot CO$$

Answer: A

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51. $CH \equiv CH \xrightarrow{CH_3MgBr} A \xrightarrow[(ii)\, H_3O^+]{(i)\, CO_2} B \xrightarrow{HgSO_4 / H_2SO_4}$

$$HO - \overset{O}{\overset{||}{C}} - CH_2 - \overset{O}{\overset{||}{C}} - OH \xrightarrow[(ii)\, H^+]{(i)\, [Ag(NH_3)_2]^+, OH^-} C$$

In the given, reaction, product C is

A. 

B. 

C. 

D. 

Answer: A

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52. The final product of the following sequence of reactinon is

$$(CH_2) = (CH_2) \xrightarrow[CCl_4]{Br_2} A \xrightarrow{KCN} B \xrightarrow{H^+ / H_2O} C$$

A. $\begin{matrix} CH_2 - COOH \\ | \\ CH_2 - COOH \end{matrix}$

B. $\begin{matrix} CH_2 - Br \\ | \\ CH_2 - Br \end{matrix}$

C. $\begin{matrix} CH_2 - COOH \\ | \\ CH_2 - CN \end{matrix}$

D. $\begin{matrix} CH_2 - CN \\ | \\ CH_2 - CN \end{matrix}$

Answer: A

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53. Which of the following can reduce

$RCOOH \rightarrow RCH_2OH$?

A. $NaBH_4$

B. Na / C_2H_5OH

C. $BH_3 / THF / H_3O^+$

D. $H_2 / \text{catalyst}$

Answer: C

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54. Chosoe the product given by the following reaction :

A. 

B. 

C. 

D. 

Answer: B

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55. Which of the following order represent acidic strenght of (I) benzoic acid. (II) 4-nitrobenzoic acids. (III) 3,4- dinitro benzoic acid and (IV) 4-methoxy benzoic acid ?

A. $I < I < III < IV$

B. $IV < I < II < III$

C. $II < III < I < IV$

D. $IV < II < III < I$

Answer: B

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Mht Cet Corner

1. Which of the following carboxylic acids is a tricarboxylic acid?

A. Oalic acid

B. Citric acid

C. succinic acid

D. Adipic acid

Answer: B

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2. $R - CN \xrightarrow[HCl]{SnCl_2} \xrightarrow{H_3O^{\oplus}} R - CHO$

Above reaction is

A. Etard reaction

B. Stephen reaction

C. Hell-Volharx-Zelinsky reaction

D. Batz-chiemann reaction

Answer: B

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

A. sodium benzoate and sodium formate

B. sodium formate and benzyl alcohol

C. sodium benzoate and methyl alcohol

D. benzyl alcohol and methyl alcohol

Answer: B

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4. Which of the following compounds is most acidic in nature ?

A. 4-chlorobutanoic acid

B. 3-chlorobutanoic acid

C. 2-chlorobutanoic acid

D. Butanoic acid

Answer: C

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5. Write the IUPAC name of following cmpound.

A. 2-amino-4-hydroxybenzoic acid

B. 6-amino-4-hydroxybenzoic acid

C. 3-amino-4-carboxyphenol

D. 2-carboxy-4-hydroxylaniline

Answer: A

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6.

Identify to compound D in above mentioned series of reaction.

A. (##ARH_EGN_PRG_CHE_C21_E03_006_O01.png" width="30%">

B. (##ARH_EGN_PRG_CHE_C21_E03_006_O02.png" width="30%">

C. (##ARH_EGN_PRG_CHE_C21_E03_006_O03.png" width="30%">

D. (##ARH_EGN_PRG_CHE_C21_E03_006_O04.png" width="30%">

Answer: B

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7. Which of the following reactions does not produce benzaldehyde as end of the product.

A. (##ARH_EGN_PRG_CHE_C21_E03_007_O01.png" width="30%">

B. (##ARH_EGN_PRG_CHE_C21_E03_007_O02.png" width="30%">

C. (##ARH_EGN_PRG_CHE_C21_E03_007_O03.png" width="30%">

D. (##ARH_EGN_PRG_CHE_C21_E03_007_O04.png" width="30%">

Answer: D

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8. Structure of the compound whose $IUPAC$ name is $3-$ ethyl$-2-$ hydroxy$-4-$ methylhex$-3-$ en$-5-$ ynoic acid is

A. (##ARH_EGN_PRG_CHE_C21_E03_008_O01.png" width="30%">

B. (##ARH_EGN_PRG_CHE_C21_E03_008_O02.png" width="30%">

C. (##ARH_EGN_PRG_CHE_C21_E03_008_O03.png" width="30%">

D. (##ARH_EGN_PRG_CHE_C21_E03_008_O04.png" width="30%">

Answer: B

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9. Which of the following acids does not contain -COOH group ?

A. Carbamic acid

B. Barituric acid

C. lactic acid

D. Succinic acid

Answer: B

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10. Aldol condensation product of acetone on dehydration gives

A. but-2-enal

B. 2-methylpent-3-en-4-one

C. 4-hydrox-4-methylpentane-2-one

D. 4-methlpent-3-en-2-one

Answer: D

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11. In the following reaction sequence, $CH_3CHO \xrightarrow[Ca(OH)_2]{Cl_2} X \xrightarrow[Alc.KOH]{C_6H_5NH_2} Y.$

Y is

A. $CH_3CH = NCH_6H_5$

B. $C_6H_5NHCH_3$

C. C_6H_5NC

D. C_6H_5NCO

Answer: C

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12. Among the following, the formula of saturated fatty acids is

A. $C_{17}H_{29}COOH$

B. $C_{17}H_{35}COOH$

C. $C_{17}H_{31}COOH$

D. $C_{17}H_{33}COOH$

Answer: B

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13. Ethyl methyl ketone is obtained by heating calcium salts of

A. formci acid + propoionic acid

B. acetic acid+ propionic acid

C. acetic acid only

D. acetic acdi + methanoic acid

Answer: B

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14. CH_3COOH when reacts with C_2H_2OH gives a product. The same product is obtained by which reaction ?

A. Acetic acdi+ methanol

B. Acetic anhybride + water

C. Acetic anhybride+ ethanol

D. Acetamide+ methanol

Answer: C

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15. The IUPAC name of crotonaldehyde is

A. butenadlehyde

B. butanal-1

C. but-2-en-1-al

D. prop-2-en-1-ol

Answer: C

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16. Which does not react with Fehling's solution?

A. CH_3CHO

B. C_6H_5CHO

C. $C_6H_{12}O_6$

D. $HCOOH$

Answer: B

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

A. acetic acid

B. succine acid

C. Formic acid

D. All of these

Answer: C

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18. Vinegar contains :

A. $15 - 20\,\%$

B. $90 - 100\,\%$

C. $7 - 8\,\%$

D. $10 - 12\,\%$

Answer: C

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19. Vinegar is an aqueous solution of

A. acetic acid

B. formic acid

C. vitamin E

D. ethanol

Answer: A

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20. The aldol condensationof acetaldehyde results in the formation of :

A. $CH_3CH_2OH + CH_3COOH$

B. CH_(3)CH_(2) underset(OH)underset(|)

(CH)underset(O)underset(||)CH`

C. $CH_3\underset{\underset{O}{||}}{C} - \underset{\underset{O}{||}}{CH} - CH_3$

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

Answer: D

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21. 2-bromopropanoic acid when heated with alcoholic KCN gives and organic compounds which on futher acid hydrolysis gives the compounds A, hence A will be

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

B. $CH_3 - \underset{\underset{CH_2NH_2}{|}}{CH} - COOH$

C. $CH_3 - \underset{\underset{NH_2}{|}}{CH} - COOH$

D. $CH_3 - CH(COOH)_2$

Answer: D

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