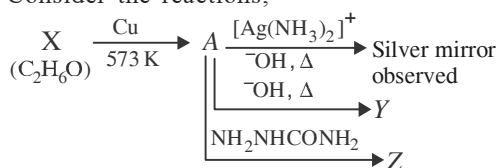


Chapter 26

Aldehydes, Ketones and Carboxylic Acids

1. Consider the reactions,

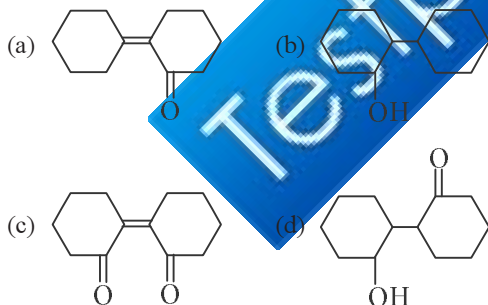


Identify A, X, Y and Z.

- A-Methoxymethane, X-Ethanol, Y-Ethanoic acid, Z-Semicarbazide.
- A-Ethanal, X-Ethanol, Y-But-2-enal, Z-Semicarbazone.
- A-Ethanol, X-Acetaldehyde, Y-Butanone, Z-Hydrazone.
- A-Methoxymethane, X-Ethanoic acid, Y-Acetate ion, Z-Hydrazine.

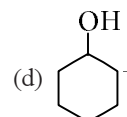
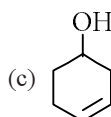
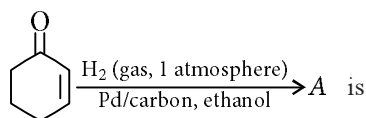
(NEET 2017)

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



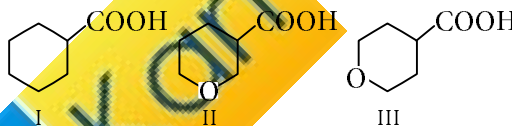
(NEET 2017)

3. The correct structure of the product 'A' formed in the reaction



(NEET-II 2016)

4. The correct order of strengths of the carboxylic acids



- is
- I > II > III
 - II > III > I
 - III > II > I
 - II > I > III

(NEET-II 2016)

5. Which of the following reagents would distinguish *cis*-cyclopenta-1-2-diol from the *trans*-isomer?

- MnO₂
- Aluminium isopropoxide
- Acetone
- Ozone

(NEET-I 2016)

6. The correct statement regarding a carbonyl compound with a hydrogen atom on its alpha-carbon, is

- a carbonyl compound with a hydrogen atom on its alpha-carbon rapidly equilibrates with its corresponding enol and this process is known as carbonylation
- a carbonyl compound with a hydrogen atom on its alpha-carbon rapidly equilibrates with its corresponding enol and this process is known as keto-enol tautomerism
- a carbonyl compound with a hydrogen atom on its alpha-carbon never equilibrates with its corresponding enol
- a carbonyl compound with a hydrogen atom on its alpha-carbon rapidly equilibrates with its corresponding enol and this process is known as aldehyde-ketone equilibration.

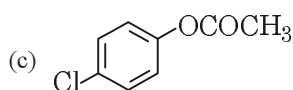
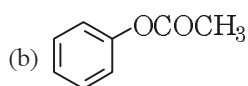
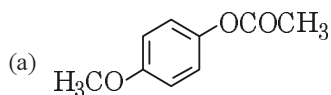
(NEET-I 2016)

Aldehydes, Ketones and Carboxylic Acids

7. The oxidation of benzene by V_2O_5 in the presence of air produces
 (a) maleic anhydride (b) benzoic acid
 (c) benzaldehyde
 (d) benzoic anhydride. (2015)

8. Reaction of a carbonyl compound with one of the following reagents involves nucleophilic addition followed by elimination of water. The reagent is
 (a) hydrazine in presence of feebly acidic solution
 (b) hydrocyanic acid
 (c) sodium hydrogen sulphite
 (d) a Grignard reagent. (2015)

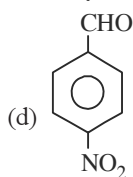
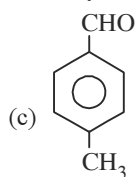
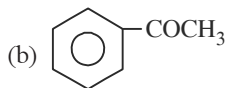
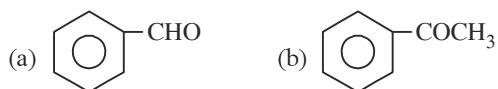
9. Which one of the following esters gets hydrolysed most easily under alkaline conditions?



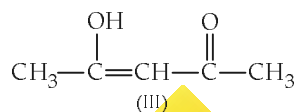
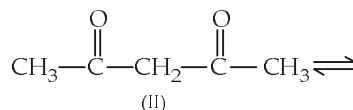
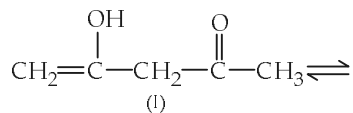
10. An organic compound 'X' having molecular formula $C_5H_{10}O$ yields phenylhydrazone and gives negative response to the iodoform test and Tollens' test. It produces *n*-pentane on reduction. 'X' could be

- (a) 3-pentanone (b) *n*-amyl alcohol
 (c) pentanal (d) 2-pentanone.
 (2015, Cancelled)

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

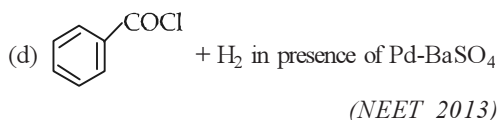
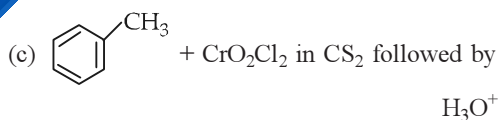
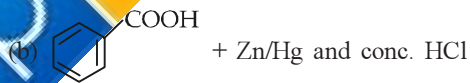
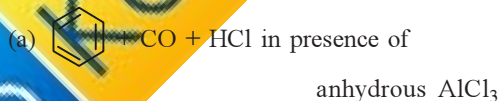


12. The order of stability of the following tautomeric compounds is

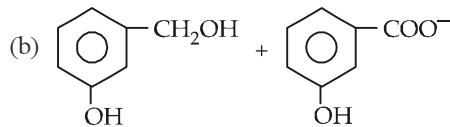
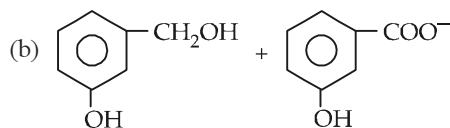
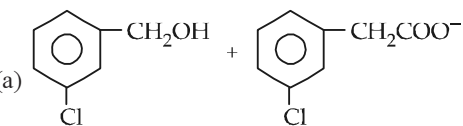
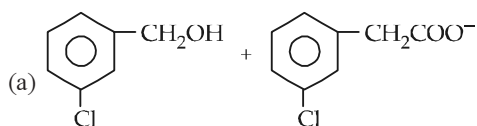
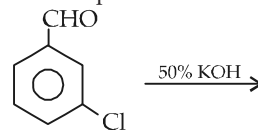


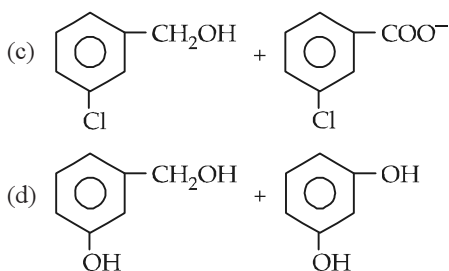
- (a) II > I > III (b) II > III > I
 (c) I > II > III (d) III > II > I
 (NEET 2013)

13. Reaction by which benzaldehyde cannot be prepared



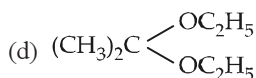
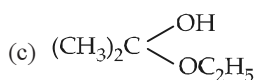
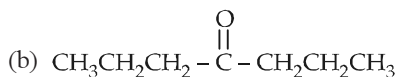
14. Predict the products in the given reaction.





(2012)

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



(2012)

16. CH_3CHO and $\text{C}_6\text{H}_5\text{CH}_2\text{CHO}$ can be distinguished chemically by

(a) Benedict's test

(b) Iodoform test

(c) Tollen's reagent test

(d) Fehling's solution test

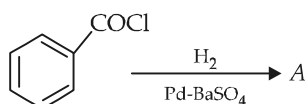
(2012)

17. The correct order of decreasing acid strength of trichloroacetic acid (A), trifluoroacetic acid (B), acetic acid (C) and formic acid (D) is

(a) $B > A > D > C$ (b) $B > D > C > A$ (c) $A > B > C > D$ (d) $A > C > B > D$

(2012)

18. Consider the following reaction

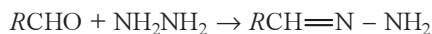


The product A is

(a) $\text{C}_6\text{H}_5\text{CHO}$ (b) $\text{C}_6\text{H}_5\text{OH}$ (c) $\text{C}_6\text{H}_5\text{COCH}_3$ (d) $\text{C}_6\text{H}_5\text{Cl}$

(Mains 2012)

19. 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

(Mains 2012)

20. Which of the following compounds will give a yellow precipitate with iodine and alkali?

(a) Acetophenone

(b) Methyl acetate

(c) Acetamide

(d) 2-Hydroxypropane

(Mains 2012)

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

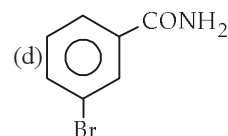
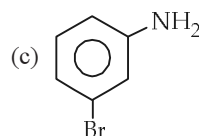
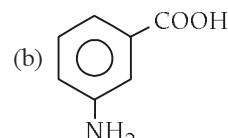
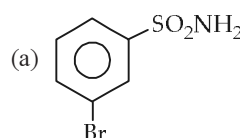
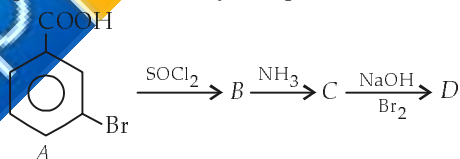
(a) Glycol with KOH

(b) Zn-Hg with HCl

(c) LiAlH_4 (d) H_2 and Pt as catalyst

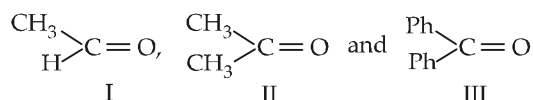
(2011)

22. In a set of reactions *m*-bromobenzoic acid gave a product D. Identify the product D.



(2011)

23. The order of reactivity of phenyl magnesium bromide (PhMgBr) with the following compounds:

(a) $\text{III} > \text{II} > \text{I}$ (b) $\text{II} > \text{I} > \text{III}$ (c) $\text{I} > \text{III} > \text{II}$ (d) $\text{I} > \text{II} > \text{III}$

(Mains 2011)

24. Match the compounds given in List-I with List-II and select the suitable option using the code given below.

List-I

(A) Benzaldehyde

(B) Phthalic anhydride

(C) Phenyl benzoate

(D) Methyl salicylate

List-II

(i) Phenolphthalein

(ii) Benzoin

condensation

(iii) Oil of wintergreen

(iv) Fries rearrangement

(a) (A)-(iv), (B)-(i), (C)-(iii), (D)-(ii)

(b) (A)-(iv), (B)-(ii), (C)-(iii), (D)-(i)

(c) (A)-(ii), (B)-(iii), (C)-(iv), (D)-(i)

(d) (A)-(ii), (B)-(i), (C)-(iv), (D)-(iii)

(Mains 2011)

25. An organic compound *A* on treatment with NH_3 gives *B*, which on heating gives *C*. *C* when treated with Br_2 in the presence of KOH produces ethyl amine. Compound *A* is

(a) CH_3COOH (b) $\text{CH}_3\text{CH}_2\text{CH}_2\text{COOH}$ (c) $\begin{array}{c} \text{CH}_3 - \text{CHCOOH} \\ | \\ \text{CH}_3 \end{array}$ (d) $\text{CH}_3\text{CH}_2\text{COOH}$

(Mains 2011)

26. Which of the following reactions will not result in the formation of carbon-carbon bonds?

(a) Reimer-Tiemann reaction

(b) Cannizzaro reaction

(c) Wurtz reaction

(d) Friedel-Crafts acylation (2010)

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

(a) $\text{NaOH}-\text{Br}_2$

(b) Sodalime

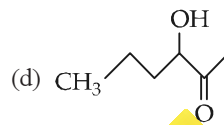
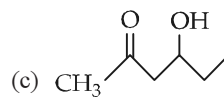
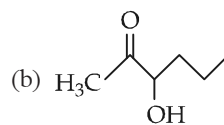
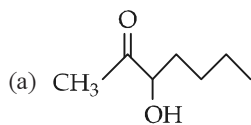
(c) Hot conc. H_2SO_4 (d) PCl_5 (2010)

28. Among the given compounds, the most susceptible to nucleophilic attack at the carbonyl group is

(a) $\text{CH}_3\text{COOCH}_3$ (b) CH_3CONH_2 (c) $\text{CH}_3\text{COOCOCH}_3$ (d) CH_3COCl

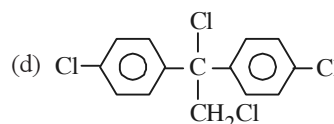
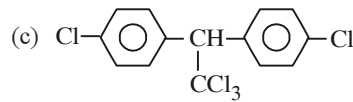
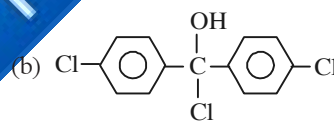
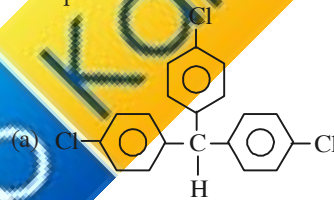
(2010)

29. Which one of the following compounds will be most readily dehydrated?



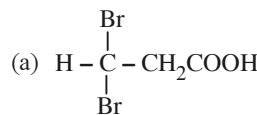
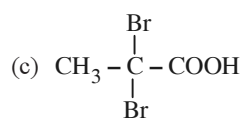
(Mains 2010)

30. Trichloroacetaldehyde, CCl_3CHO reacts with chlorobenzene in presence of sulphuric acid and produces



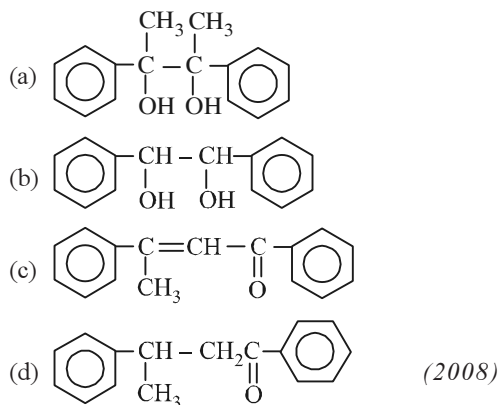
(2009)

31. Propionic acid with Br_2/P yields a dibromo product. Its structure would be

(b) $\text{CH}_2(\text{Br}) - \text{CH}_2 - \text{COBr}$ (d) $\text{CH}_2(\text{Br}) - \text{CH}(\text{Br}) - \text{COOH}$

(2009)

32. Acetophenone when reacted with a base, C_2H_5ONa , yields a stable compound which has the structure



33. A strong base can abstract an α -hydrogen from

- (a) ketone (b) alkane
(c) alkene (d) amine. (2008)

34. The relative reactivities of acyl compounds towards nucleophilic substitution are in the order of

- (a) Acid anhydride > Amide > Ester > Acyl chloride
(b) Acyl chloride > Ester > Acid anhydride > Amide
(c) Acyl chloride > Acid anhydride > Ester > Amide
(d) Ester > Acyl chloride > Amide > Acid anhydride. (2008)

35. Reduction of aldehydes and ketones into hydrocarbons using zinc amalgam and conc. HCl is called

- (a) Cope reduction
(b) Dow reduction
(c) Wolf-Kishner reduction
(d) Clemmensen reduction. (2007)

36. Which one of the following on treatment with 50% aqueous sodium hydroxide yields the corresponding alcohol and acid?

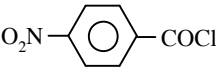


- (a) C_6H_5CHO
(b) $CH_3CH_2CH_2CHO$
(c) $CH_3 - \overset{O}{\parallel} C - CH_3$ (d) $C_6H_5CH_2CHO$

(2007)

37. The product formed in Aldol condensation is

- (a) a beta-hydroxy aldehyde or a beta-hydroxy ketone
(b) an alpha-hydroxy aldehyde or ketone
(c) an alpha, beta unsaturated ester
(d) a beta-hydroxy acid. (2007)

38. Consider the following compounds

- (i) C_6H_5COCl
(ii) 
(iii) 
(iv) 

The correct decreasing order of their reactivity towards hydrolysis is

- (a) (i) > (ii) > (iii) > (iv)
(b) (iv) > (ii) > (i) > (iii)
(c) (ii) > (iv) > (i) > (iii)
(d) (ii) > (iv) > (iii) > (i) (2007)

39. Which of the following represents the correct order of the acidity in the given compounds?

- (a) $FCH_2COOH > CH_3COOH > BrCH_2COOH > ClCH_2COOH$
(b) $BrCH_2COOH > ClCH_2COOH > FCH_2COOH > CH_3COOH$
(c) $FCH_2COOH > ClCH_2COOH > BrCH_2COOH > CH_3COOH$
(d) $CH_3COOH > BrCH_2COOH > ClCH_2COOH > FCH_2COOH$ (2007)

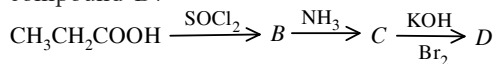
40. Nucleophilic addition reaction will be most favoured in

- (a) CH_3CHO
(b) $CH_3 - CH_2 - \overset{O}{\parallel} C - CH_3$
(c) $(CH_3)_2C = O$
(d) CH_3CH_2CHO (2006)

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

- (a) formaldehyde (b) acetaldehyde
(c) acetone (d) diethyl ketone. (2006)

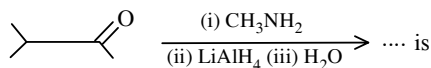
42. In a set of reactions propionic acid yielded a compound *D*.

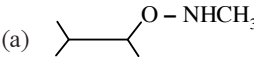
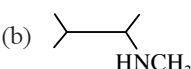
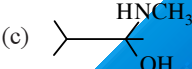
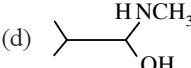


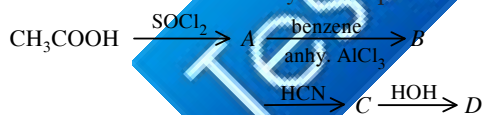
The structure of *D* would be

- (a) $\text{CH}_3\text{CH}_2\text{NH}_2$ (b) $\text{CH}_3\text{CH}_2\text{CH}_2\text{NH}_2$
 (c) $\text{CH}_3\text{CH}_2\text{CONH}_2$ (d) $\text{CH}_3\text{CH}_2\text{NHCH}_3$ (2006)
43. Self condensation of two moles of ethyl acetate in presence of sodium ethoxide yields
- (a) ethyl propionate (b) ethyl butyrate
 (c) acetoacetic ester (d) methyl acetoacetate. (2006)

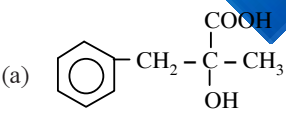
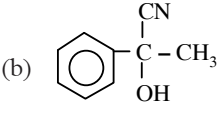
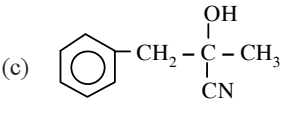
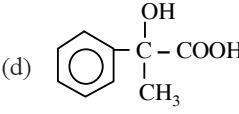
44. The major organic product formed from the following reaction :



- (a)  (b)  (c) 
 (d)  (2005)
45. In a set of reactions acetic acid yielded a product *D*.



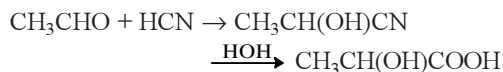
The structure of *D* would be

- (a)  (b) 
 (c)  (d)  (2005)

46. Which one of the following can be oxidised to the corresponding carbonyl compound?

- (a) 2-Hydroxypropane
 (b) *ortho*-Nitrophenol
 (c) Phenol
 (d) 2-Methyl-2-hydroxypropane (2004)


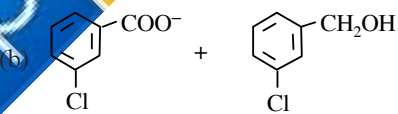
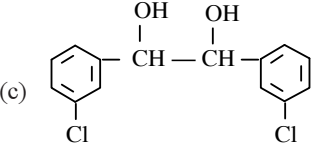
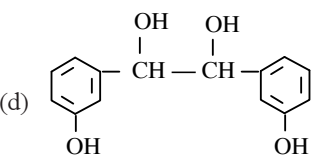
47. In this reaction :



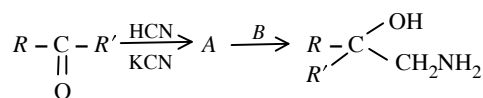
an asymmetric centre is generated. The acid obtained would be

- (a) *D*-isomer (b) *L*-isomer
 (c) 50% *D* + 50% *L*-isomer
 (d) 20% *D* + 80% *L*-isomer (2003)

48. When *m*-chlorobenzaldehyde is treated with 50% KOH solution, the product(s) obtained is (are)

- (a) 
 (b) 
 (c) 
 (d)  (2003)

49. *A* and *B* in the following reactions are :



- (a) $A = RR'\text{C} \begin{matrix} \text{OH} \\ \text{COOH} \end{matrix}$, $B = \text{NH}_3$
 (b) $A = RR'\text{C} \begin{matrix} \text{CN} \\ \text{OH} \end{matrix}$, $B = \text{H}_3\text{O}^{\oplus}$
 (c) $A = RR\text{CH}_2\text{CN}$, $B = \text{NaOH}$
 (d) $A = RR'\text{C} \begin{matrix} \text{CN} \\ \text{OH} \end{matrix}$, $B = \text{LiAlH}_4$ (2003)

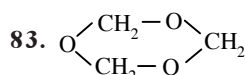
50. In a set of the given reactions, acetic acid yielded a product *C*.
- $$\text{CH}_3\text{COOH} + \text{PCl}_5 \rightarrow A \xrightarrow[\text{Anh. AlCl}_3]{\text{C}_6\text{H}_6} B \xrightarrow[\text{ether}]{\text{C}_2\text{H}_5\text{MgBr}} C$$
- Product *C* would be
- (a) $\text{CH}_3\text{CH}(\text{OH})\text{C}_2\text{H}_5$ (b) $\text{CH}_3\text{COC}_6\text{H}_5$
 (c) $\text{CH}_3\text{CH}(\text{OH})\text{C}_6\text{H}_5$
 (d) $\text{CH}_3 - \overset{\text{C}_2\text{H}_5}{\underset{|}{\text{C}}}(\text{OH})\text{C}_6\text{H}_5$ (2003)
51. $\overset{\ominus}{\text{C}}\text{H}_2 - \overset{\ominus}{\text{C}}(\text{O}) - \text{CH}_3$ and $\text{CH}_2 = \overset{\ominus}{\text{C}}(\text{O}) - \text{CH}_3$ are
- (a) resonating structures
 (b) tautomers
 (c) geometrical isomers
 (d) optical isomers. (2002)
52. In the following reaction product *P* is
- $$\text{R} - \overset{\text{O}}{\underset{||}{\text{C}}} - \text{Cl} \xrightarrow[\text{Pd-BaSO}_4]{\text{H}_2} \text{P}$$
- (a) RCH_2OH (b) RCOOH
 (c) RCHO (d) RCH_3 (2002)
53. Which alkene on ozonolysis gives $\text{CH}_3\text{CH}_2\text{CHO}$ and CH_3COCH_3 ?
- (a) $\text{CH}_3\text{CH}_2\text{CH}=\overset{\text{CH}_3}{\underset{\text{CH}_3}{\text{C}}}$
 (b) $\text{CH}_3\text{CH}_2\text{CH}=\text{CHCH}_2\text{CH}_3$
 (c) $\text{CH}_3\text{CH}_2\text{CH}=\text{CHCH}_3$
 (d) $\text{CH}_3 - \overset{\text{CH}_3}{\underset{|}{\text{C}}}=\text{CHCH}_3$ (2001)
54. Which of the following give positive Fehling solution test?
- (a) Sucrose (b) Glucose
 (c) Fats (d) Protein (2001)
55. Polarisation in acrolein can be described as
- (a) $\overset{+\delta}{\text{CH}_2}=\overset{+\delta}{\text{CH}}-\overset{+\delta}{\text{CHO}}$
 (b) $\overset{-\delta}{\text{CH}_2}=\overset{+\delta}{\text{CH}}-\overset{+\delta}{\text{CHO}}$
 (c) $\overset{-\delta}{\text{CH}_2}=\overset{+\delta}{\text{CH}}-\overset{+\delta}{\text{CHO}}$
 (d) $\overset{+\delta}{\text{CH}_2}=\overset{-\delta}{\text{CH}}-\overset{-\delta}{\text{CHO}}$ (2000)
56. First product of the reaction between RCHO and NH_2NH_2 is
- (a) $\text{RCH}=\text{NNH}_2$ (b) $\text{RCH}=\text{NH}$
 (c) RCH_2NH_2 (d) RCON_3 (2000)
57. Ethyl benzoate can be prepared from benzoic acid by using
- (a) ethyl alcohol
 (b) ethyl alcohol and dry HCl
 (c) ethyl chloride
 (d) sodium ethoxide. (2000)
58. Reduction by LiAlH_4 of hydrolysed product of an ester gives
- (a) two alcohols
 (b) two aldehydes
 (c) one acid and one alcohol
 (d) two acids. (2000)
59. In the reaction $\text{CH}_3\text{CN} + 2\text{H} \xrightarrow[\text{Ethers}]{\text{HCl}} X$
 $\xrightarrow{\text{Boiling H}_2\text{O}} Y$; the term *Y* is
- (a) acetaldehyde (b) ethanamine
 (c) acetone (d) dimethylamine (1999)
60. Aldol condensation will not take place in
- (a) $\text{C}_6\text{H}_5\text{COCH}_3$ (b) CH_3CHO
 (c) HCHO (d) $\text{CH}_3\text{CH}_2\text{CHO}$ (1999, 1996)
61. Which one of the following compounds will react with NaHCO_3 solution to give sodium salt and carbon dioxide?
- (a) Acetic acid (b) *n*-Hexanol
 (c) Phenol (d) Both (b) and (c) (1999)
62. Which one of the following esters cannot undergo Claisen self-condensation?
- (a) $\text{C}_6\text{H}_5\text{CH}_2\text{COOC}_2\text{H}_5$
 (b) $\text{C}_6\text{H}_5\text{COOC}_2\text{H}_5$
 (c) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{COOC}_2\text{H}_5$
 (d) $\text{C}_6\text{H}_{11}\text{CH}_2\text{COOC}_2\text{H}_5$ (1998)
63. An ester (*A*) with molecular formula, $\text{C}_9\text{H}_{10}\text{O}_2$ was treated with excess of CH_3MgBr and the complex so formed, was treated with H_2SO_4 to give an olefin (*B*). Ozonolysis of (*C*) gave a ketone with molecular formula $\text{C}_8\text{H}_8\text{O}$ which shows +ve iodoform test. The structure of (*A*) is
- (a) $\text{H}_3\text{CCH}_2\text{COC}_6\text{H}_5$
 (b) $\text{C}_2\text{H}_5\text{COOC}_6\text{H}_5$
 (c) $\text{C}_6\text{H}_5\text{COOC}_2\text{H}_5$
 (d) *p*- $\text{H}_3\text{CO} - \text{C}_6\text{H}_4 - \text{COCH}_3$ (1998)
64. Ketones [RCOR_1] where $R = R_1 =$ alkyl group. It can be obtained in one step by
- (a) oxidation of tertiary alcohol
 (b) reaction of acid halide with alcohols
 (c) hydrolysis of esters
 (d) oxidation of primary alcohol. (1997)

Aldehydes, Ketones and Carboxylic Acids

65. Phenylmethanol can be prepared by reducing the benzaldehyde with
 (a) CH_3Br and Na (b) CH_3I and Mg
 (c) CH_3Br (d) Zn and HCl .
 (1997)
66. The oxidation of toluene to benzaldehyde by chromyl chloride is called
 (a) Etard reaction
 (b) Riemer-Tiemann reaction
 (c) Wurtz reaction
 (d) Cannizzaro's reaction. (1996)
67. Which of the following compound gives benzoic acid on hydrolysis?
 (a) Chlorobenzene (b) Benzoyl chloride
 (c) Chlorophenol (d) Chlorotoluene
 (1996)
68. The order of reactivity of carbonyl compounds for nucleophilic addition is
 (a) $\text{Ar}_2\text{C}=\text{O} > \text{R}_2\text{C}=\text{O} > \text{ArCHO} > \text{RCHO} > \text{H}_2\text{C}=\text{O}$
 (b) $\text{H}_2\text{C}=\text{O} > \text{R}_2\text{C}=\text{O} > \text{Ar}_2\text{C}=\text{O} > \text{RCHO} > \text{ArCHO}$
 (c) $\text{H}_2\text{C}=\text{O} > \text{RCHO} > \text{ArCHO} > \text{R}_2\text{C}=\text{O} > \text{Ar}_2\text{C}=\text{O}$
 (d) $\text{ArCHO} > \text{Ar}_2\text{C}=\text{O} > \text{RCHO} > \text{R}_2\text{C}=\text{O} > \text{H}_2\text{C}=\text{O}$
 (1995)
69. In the reaction
 $\text{CH}_3\text{CHO} + \text{HCN} \rightarrow \text{CH}_3\text{CH}(\text{OH})\text{CN}$,
 a chiral centre is produced. This product is
 (a) dextrorotatory (b) racemic mixture
 (c) meso compound (d) laevorotatory.
 (1995)
70. Which one of the following product is formed when adipic acid is heated?
 (a) $\begin{array}{l} \text{CH}_2\text{CH}_2\text{CO} \\ | \quad \quad \quad \diagdown \\ \text{CH}_2\text{CH}_2\text{CO} \quad \quad \quad \text{O} \end{array}$ (b) $\begin{array}{l} \text{CH}_2\text{CH}_2\text{COOH} \\ | \\ \text{CH}_2\text{CH}_2\text{COOH} \end{array}$
 (c) $\begin{array}{l} \text{CH}_2 - \text{CH}_2 \\ | \quad \quad \quad \diagdown \\ \text{CH}_2 - \text{CH}_2 \quad \quad \quad \text{O} \end{array}$
 (d) $\begin{array}{l} \text{CH}_2 - \text{CH}_2 \\ | \quad \quad \quad \diagdown \\ \text{CH}_2 - \text{CH}_2 \quad \quad \quad \text{C}=\text{O} \end{array}$ (1995)
71. The oxidation of toluene with CrO_3 in the presence of $(\text{CH}_3\text{CO})_2\text{O}$ gives a product *A*, which on treatment with aqueous NaOH produces
 (a) $\text{C}_6\text{H}_5\text{COONa}$
 (b) 2, 4-diacetyl toluene
 (c) $\text{C}_6\text{H}_5\text{CHO}$ (d) $(\text{C}_6\text{H}_5\text{CO})_2\text{O}$.
 (1995)
72. Compound *A* has a molecular formula $\text{C}_2\text{Cl}_3\text{OH}$. It reduces Fehling's solution and on oxidation, it gives a monocarboxylic acid *B*. If *A* is obtained by the action of chlorine on ethyl alcohol, then compound *A* is
 (a) methyl chloride
 (b) monochloro acetic acid
 (c) chloral (d) chloroform.
 (1994)
73. Which of the following compound will undergo self aldol condensation in the presence of cold dilute alkali?
 (a) $\text{CH} \equiv \text{C} - \text{CHO}$ (b) $\text{CH}_2 = \text{CHCHO}$
 (c) $\text{C}_6\text{H}_5\text{CHO}$ (d) $\text{CH}_3\text{CH}_2\text{CHO}$
 (1994)
74. Which of the following compounds will give positive test with Tollen's reagent?
 (a) Acetic acid (b) Acetone
 (c) Acetamide (d) Acetaldehyde
 (1994)
75. An acyl halide is formed when PCl_5 reacts with an
 (a) amide (b) ester
 (c) acid (d) alcohol. (1994)
76. Sodium formate on heating yields
 (a) oxalic acid and H_2
 (b) sodium oxalate and H_2
 (c) CO_2 and NaOH
 (d) sodium oxalate. (1993)
77. $(\text{CH}_3)_2\text{C}=\text{CHCOCH}_3$ can be oxidised to $(\text{CH}_3)_2\text{C}=\text{CHCOOH}$ by
 (a) chromic acid (b) NaOI
 (c) Cu at 300°C (d) KMnO_4 (1993)
78. In which of the following, the number of carbon atoms does not remain same when carboxylic acid is obtained by oxidation?
 (a) CH_3COCH_3 (b) $\text{CCl}_3\text{CH}_2\text{CHO}$
 (c) $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$ (d) $\text{CH}_3\text{CH}_2\text{CHO}$
 (1992)
79. Benzoic acid gives benzene on being heated with *X* and phenol gives benzene on being heated with *Y*. Therefore *X* and *Y* are respectively
 (a) soda-lime and copper
 (b) Zn dust and NaOH
 (c) Zn dust and soda-lime
 (d) soda-lime and zinc dust. (1992)
80. Acetaldehyde reacts with
 (a) electrophiles only (b) nucleophiles only
 (c) free radicals only
 (d) both electrophiles and nucleophiles.
 (1991)

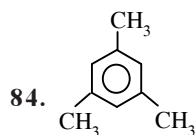
81. The reagent (s) which can be used to distinguish acetophenone from benzophenone is (are)
 (a) 2,4-dinitrophenylhydrazine
 (b) aqueous solution of NaHSO₃
 (c) Benedict reagent
 (d) I₂ and NaOH. (1990)

82. Indicate which of the nitrogen compound amongst the following would undergo Hofmann's reaction, i.e., reaction with Br₂ and strong KOH to furnish the primary amine (R - NH₂)?
 (a) R - CO - NHCH₃ (b) R - CO - ONH₄
 (c) R - CO - NH₂ (d) R - CO - NHOH. (1989)



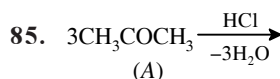
The above shown polymer is obtained when a carbonyl compound is allowed to stand. It is a white solid. The polymer is

- (a) trioxane (b) formose
 (c) paraformaldehyde (d) metaldehyde. (1989)

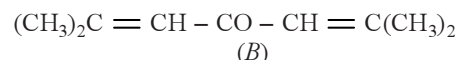


The given compound describes a condensation polymer which can be obtained in two ways : either treating 3 molecules of acetone (CH₃COCH₃) with conc. H₂SO₄ or passing propyne (CH₃C ≡ CH) through a red hot tube. The polymer is

- (a) phorone
 (b) mesityl oxide
 (c) deacetyl alcohol
 (d) mesitylene. (1989)



(A)



This polymer (B) is obtained when acetone is saturated with hydrogen chloride gas, B can be
 (a) phorone (b) formose
 (c) diacetone alcohol (d) mesityl oxide.

(1989)

86. The compound formed when malonic acid is heated with urea is

- (a) cinnamic acid (b) butyric acid
 (c) barbituric acid (d) crotonic acid. (1989)

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

- (a) methane (b) methyl alcohol
 (c) ethyl formate (d) acetylene. (1988)

88. Formalin is an aqueous solution of

- (a) fluorescein (b) formic acid
 (c) formaldehyde (d) furfuraldehyde. (1988)

89. Among the following the strongest acid is

- (a) CH₃COOH (b) CH₂ClCH₂COOH
 (c) CH₂ClCOOH (d) CH₃CH₂COOH. (1988)

90. Which of the following is the correct decreasing order of acidic strength of

- (i) methanoic acid (ii) ethanoic acid
 (iii) propanoic acid (iv) butanoic acid
 (a) (i) > (ii) > (iii) > (iv)
 (b) (ii) > (iii) > (iv) > (i)
 (c) (i) > (iv) > (iii) > (ii)
 (d) (iv) > (i) > (iii) > (ii). (1988)

Answer Key

1. (b) 2. (a) 3. (b) 4. (b) 5. (c) 6. (b) 7. (a) 8. (a) 9. (d) 10. (a)
 11. (d) 12. (d) 13. (b) 14. (c) 15. (d) 16. (b) 17. (a) 18. (a) 19. (d) 20. (a,d)
 21. (b) 22. (c) 23. (d) 24. (d) 25. (d) 26. (b) 27. (a) 28. (d) 29. (c) 30. (c)
 31. (c) 32. (c) 33. (a) 34. (c) 35. (d) 36. (a) 37. (a) 38. (c) 39. (c) 40. (a)
 41. (b) 42. (a) 43. (c) 44. (b) 45. (d) 46. (a) 47. (c) 48. (b) 49. (d) 50. (d)
 51. (a) 52. (c) 53. (a) 54. (b) 55. (d) 56. (a) 57. (b) 58. (a) 59. (a) 60. (c)
 61. (a) 62. (b) 63. (c) 64. (a) 65. (d) 66. (a) 67. (b) 68. (c) 69. (b) 70. (a)
 71. (c) 72. (c) 73. (d) 74. (d) 75. (c) 76. (b) 77. (b) 78. (a) 79. (d) 80. (b)
 81. (d) 82. (c) 83. (a) 84. (d) 85. (a) 86. (c) 87. (b) 88. (c) 89. (c) 90. (a)