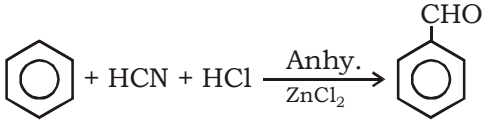
Unit 8 ALDEHYDE, KETONE & CARBOXYLIC ACID

MULTIPLE CHOICE QUESTIONS

TOPIC (1) PREPARATION OF ALDEHYDE, KETONE AND CARBOXILIC ACID

1. The reaction



is called

(a) perkin's reaction
(b) gattermann reaction
(c) kolbe's reaction
(d) gattermann koch synthesis

2. $CH_3COCl \xrightarrow[H_2]{Pd/BaSO_4} 'A'$. The isomers of CH_3COCl and 'A' will be respectively

(a) CH_2ClCHO, oxirane
(b) α – chloroethyl alcohol, epoxyethane
(c) chloral, vinyl alcohol
(d) none of these

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

(a) phenol and acetic acid
(b) benzene and acetone
(c) benzene and acetyl chloride
(d) phenol and acetone

4. Reaction of ethyl formate with excess of CH_3MgI followed by hydrolysis gives

(a) n-Propyl alcohol (b) ethanal
(c) propanal (d) Isopropyl alcohol.

5. Which of the following alcohols can't be prepared by the action of a suitable Grignard reagent on an aldehyde or ketone followed by hydrolysis:

(a) Ethyl alcohol (b) Methanol
(c) Isopropyl alcohol (d) n-propyl alcohol

6. Ethylidene chloride reacts with KOH gives:

(a) ethylene glycol (b) HCHO
(c) ethanal (d) none

7. $CH_3OH \xrightarrow{Pl_3} A \xrightarrow{KCN} B \xrightarrow{Hydrolysis} C.$

The compound C is:

(a) CH_3OH (b) HCOOH
(c) CH_3CHO (d) CH_3COOH

8. Which carbonyl compound (s) can be used to produce 2-Phenylbutan-2-ol on reaction with a suitable Grignard reagent?

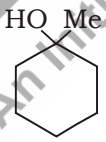
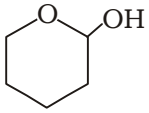
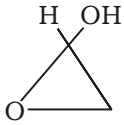
(a) $CH_3 - CO - CH_2 - CH_3$
(b) $Ph - CO - CH_3$
(c) $Ph - CO - CH_2 - CH_3$
(d) All of these

9. $R - X \xrightarrow[ether]{Mg} \xrightarrow{H_3O^+}$ 

How many isomers (excluding stereosiomers) of R-X can give the above product in the given reaction?

(a) 1 (b) 2
(c) 3 (d) 4

10. Which of the compound is hemiacetal ?

(a) 
(b) 
(c) 
(d) all of these

TOPIC (2) REACTION OF CANIZZARO'S FAMILY, ALDON CONDENSATION

11. Acetaldehyde when treated with dilute NaOH gives

(a) CH_3CH_2OH (b) CH_3COOH
(c) $CH_3\underset{\underset{OH}{|}}{C}H\text{-}CH_2CHO$
(d) $CH_3 - CH_3$

12. Which of the following will not undergo aldol condensation

(a) acetaldehyde
(b) propionaldehyde
(c) benzaldehyde
(d) trideutero-acetaldehyde

13. In which reaction aromatic aldehyde is treated with acetic anhydride in presence of corresponding salt of the acid to give unsaturated aromatic acid

(a) friedel Crafts reaction
(b) perkin's reaction
(c) wurtz reaction
(d) claisen reaction

14. $RCHO \xrightarrow{X} RCH_3$; X is
(a) Sn / HCl (b) N_2H_4/OH^-
(c) $LiAlH_4$ (d) H_2/Ni

15. Formaldehye and acetaldehyde are manufactured by dehydrogenation of methanol and ethanol respectively. The catalyst used in the reaction is
(a) conc. H_2SO_4 (b) Copper
(c) Nickel (d) H_3PO_4

16. The relative reactivities of acyl compounds towards nucleophilic substitution are in the order of
(a) Acid anhydride > Amide > Ester > Acyl chloride
(b) Acyl choride > Ester > Acid anhydride > Amide
(c) Acyl chloride > Acid anhydride > Ester > amide
(d) Ester > Acid chloride > Amide > Acid anhydride

17. In the Cannizzaro reaction given below,

$2\,Ph-CHO \xrightarrow{OH^-} Ph-CH_2OH + PHCO_2^-$,

the slowest step is :
(a) the attack of OH^- at the carbonyl group
(b) the transfer of hydride ion to the carbonyl group
(c) the abstraction of a proton from the carboxylic acid
(d) the deprotonation of $Ph-CH_2OH$

18. Aldehydes turn pink with
(a) benedict solution (b) schiff's reagent
(c) fehling's solution (d) molisch reagent

19. The reaction,
$C_6H_5CHO + CH_3CHO \rightarrow C_6H_5CH=CHCHO$ is called
(a) perkin's reaction
(b) claisen reaction
(c) benzoin condensation
(d) cannizzaro's reaction

20. $2CH_3COCH_3 \xrightarrow[Gas]{dry\ HCl}$ gives
(a) mesityl oxide
(b) phoron
(c) mesitylene
(d) $CH_3-\underset{\underset{OH}{|}}{\overset{\overset{CH_3}{|}}{C}}-CH_2COCH_3$

21. Among the following compounds the most susceptible to nucleophilic attack at the carbonyl group is
(a) MeCOCl (b) MeCHO
(c) MeCOOMe (d) MeCO – O – COMe

22. Aromatic aldehydes in the presnece of cyanide ion as catalyst, are converted to acyl ions. This reaction is called
(a) perkin's reaction
(b) cannizzaro's reaction
(c) benzoin condensation
(d) claisen condensation

23. Under Wolf Kishner reduction conditions, the conversion which may be brought about is
(a) benzaldehyde into benzyl alcohol
(b) cyclohexanol into cyclohexane
(c) cyclohexanone into cyclohexanol
(d) benzophenone into diphenyl methane

24. The vapour density of a compound is 29, which reacts with iodine and NaOH to form a yellow compound. The compound is
(a) CH_3COOH (b) CH_3COCH_3
(c) $CH_3CHOHCH_3$ (d) CH_3OH

25. Which of the following has the most acidic hydrogen
(a) 3-hexanone (b) 2,4-hexanedione
(c) 2,5-hexanedione (d) 2,3-hexanedione

26. Cannizzaro reaction is not given by
(a) trimethyl acetaldehyde
(b) acetaldehyde
(c) benzaldehyde
(d) formaldehyde

27. Formaldehyde when treated with KOH (caustic potash) gives methanol and potassium formate, the reaction is known as
(a) perkin's reaction
(b) claisen's reaction
(c) cannizzaro's reaction
(d) knoevenagel's reaction

28. Schiff's reagent is
(a) alkaline phenolphthalein
(b) methyl red
(c) rosaniline hydrochloride
(d) red litmus

29. A compound possessing α-hydrogen atom, in the presence of dilute alkali forms β-hydroxy aldehyde. This product on heating with dilute acid forms an unsaturated crotonaldehyde. The compound is

(a) CH_3CHO (b) CH_3CH_2CHO

(c) $CH_2 = CH - CHO$ (d) $HC \equiv C - CHO$

30. An organic compound X on treatment with acidified $K_2Cr_2O_7$ gives compound Y which reacts with I_2 and sodium carbonate to form Triiodomethane. The compound X can be

(a) CH_3OH (b) $CH_3\overset{\overset{O}{\|}}{C}CH_3$

(c) CH_3CHO (d) $CH_3CH(OH)CH_3$

31. In this reaction

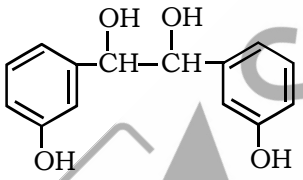
$$CH_3CHO + HCN \longrightarrow CH_3CH(OH)CN$$

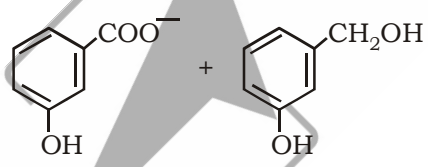
$$\xrightarrow{H_2O/H^+} CH_3CH(OH)COOH.$$

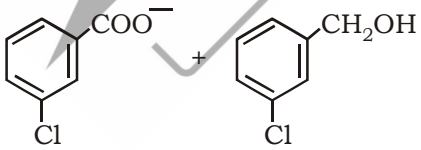
An asymmetric centre is generated. The acid obtained would be

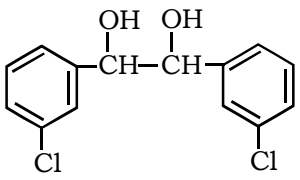
(a) 20 % d + 80% *l*-isomer
(b) *d*-isomer
(c) *l*-isomer
(d) 50% *d* + 50 % *l*-isomer

32. When m-chlorobenzaldehyde is treated with 50% KOH solution, the product obtained is

(a) 

(b) 

(c) 

(d) 

33. Acetamide and $NaOBr / OH^-$ produce

(a) Ethanamine (b) Methanamine

(c) CH_3CN (d) NH_3

34. What is Z in the following sequence of reactions

$$? \; Phenol \xrightarrow{Zn\ dust} X \xrightarrow[anhyd.AlCl_3]{CH_3Cl} Y \xrightarrow[KMnO_4]{Alkaline} Z$$

(a) toluene (b) benzene

(c) benzoic acid (d) benzaldehyde

35. Hydrolysis of trichloromethane with aqueous KOH gives

(a) potassium formate
(b) acetylene
(c) chloral
(d) methanol.

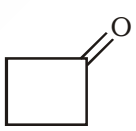
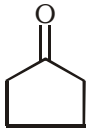
36. In the following reduction, reducing agent used is :

$$CH_3\overset{\overset{O}{\|}}{C}OCH(CH_3)_2 \longrightarrow CH_3CH_2OH + (CH_3)_2CHOH$$

(a) DIBAL–H (b) $LiAlH_4$

(c) $NaAlH_4$ (d) $H_2 / Pd - BaSO_4$

37. For the following transformation :

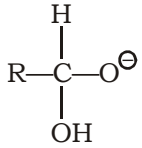
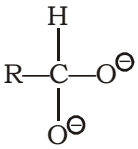
 

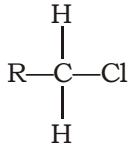
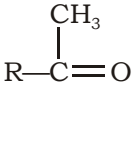
reagent used is

(a) SeO_2 (b) $C_6H_5CO_3H$

(c) $ClO^{\ominus}$ (d) Se

38. Which is the best hydride donor ?

(a)  (b) 

(c)  (d) 

39. Fehling's solution can make distinction between

(a) CH_3CHO and C_6H_5CHO

(b) CH_3CHO and $CH_3\overset{\overset{O}{||}}{C}CH_2OH$

(c) $CH_3\underset{OH}{\underset{|}{CH}}\overset{\overset{O}{||}}{C}CH_3$ and HCHO

(d) CH_3CHO and HCHO

40. On vigorous oxidation by permanganate solution, $(CH_3)_2C = CH - CH_2 - CH_3$ gives

(a) $CH_3-\underset{CH_3}{\overset{OH}{\underset{|}{\overset{|}{C}}}}-\underset{OH}{\underset{|}{CH}}-CH_2CH_3$

(b) $\begin{matrix}CH_3\\CH_3\end{matrix}\!\!\diagdown\!\!\diagup CHCO_2H + CHC_3H_2COOH$

(c) $\begin{matrix}CH_3\\CH_3\end{matrix}\!\!\diagdown\!\!\diagup CHOH + CH_3CH_2OH$

(d) $\begin{matrix}CH_3\\CH_3\end{matrix}\!\!\diagdown\!\!\diagup C{=}O + CH_3CH_2COOH$

41. Arrange the following with respect to relative reactivity of acid derivatives towards hydrolysis

I. $R-\overset{\overset{O}{||}}{C}-Cl$ II. $R-\overset{\overset{O}{||}}{C}-O-\overset{\overset{O}{||}}{C}-R'$

III. $R-\overset{\overset{O}{||}}{C}-OR$ IV. $R-\overset{\overset{O}{||}}{C}-NH_2$

(a) II > III > I > IV (b) IV > III > II > I
(c) I > II > III > IV (d) I > III > II > IV

42. An organic compound X on treatment with alc. KOH gave isomeric product with the formula C_4H_8. on ozonolysis one of the these gave only product CH_3CHO while the other gave two different products. the compound X:
(a) 2-Bromobutane
(b) 2-bromopentane
(c) 1,2 dibromo butane
(d) 3-Bromopentene

43. In the following reaction reagent Z can be
Pent - 4- en-2-one $\xrightarrow{\text{Reagent-Z}}$ Pentan -2-ol
(a) $NaBH_4$, EtOH (b) $LiAlH_4$, ether
(c) H_2 Pd (d) Zn-Hg, HCl

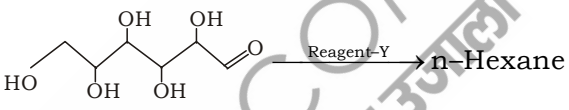
44. Among the following ethers, which one will produce methyl alcohol on treatment with one equivalent of hot concentrated HI?

(a) $CH_3-CH_2-\underset{CH_3}{\underset{|}{CH}}-O-CH_3$

(b) $CH_3-\underset{CH_3}{\overset{CH_3}{\underset{|}{\overset{|}{C}}}}-O-CH_3$

(c) $CH_3-\underset{CH_3}{\underset{|}{CH}}-CH_2-OCH_3$

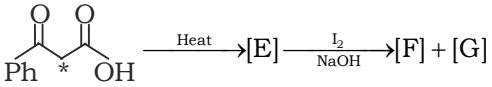
(d) $CH_3-CH_2-CH_2-CH_2-O-CH_3$

45. 

reagent Y would be:
(a) $LiAlH_4$, ether (b) H_2, Ni
(c) Red P+ HI (d) N_2H_4, Conc. KOH

46. The major organic compound formed by the reaction of 1,1,1-trichloroethane with silver powder is:
(a) Acetylene (b) Ethene
(c) 2-Butyne (d) 2 - Butene

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



[*implies ^{13}C labelled carbon]

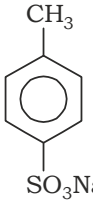
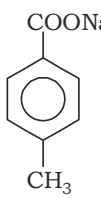
(a) E = $Ph\overset{*}{C}H(CH_3)C(=O)$ F = $Ph\overset{*}{C}H(CH_3)C(=O)O^{\ominus}Na^{\oplus}$ G = CHI_3

(b) E = $PhCH(CH_3)\overset{*}{C}(=O)$ F = $PhCH(CH_3)\overset{*}{C}(=O)O^{\ominus}Na^{\oplus}$ G = CHI_3

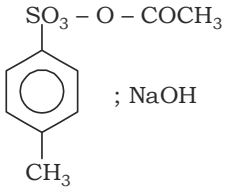
(c) E = $PhCH(CH_3)\overset{*}{C}(=O)$ F = $PhCH(CH_3)\overset{*}{C}(=O)O^{\ominus}Na^{\oplus}$ G = $\overset{*}{C}HI_3$

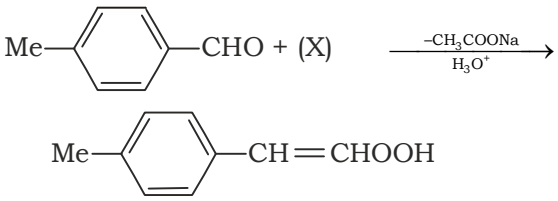
(d) E = $PhCH(CH_3)\overset{*}{C}(=O)$ F = $PhCH(CH_3)\overset{*}{C}(=O)O^{\ominus}Na^{\oplus}$ G = $\overset{*}{C}H_3I$

48. 4-methylbenzenesulphonic acid reacts with sodium acetate to give:

(a)  ; CH_3COOH (b)  ; SO_3

(c)  ; SO_3

(d)  ; NaOH

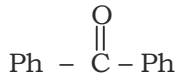
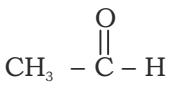
49. 

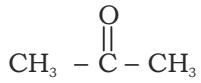
The compound (X) is

(a) CH_3COOH (b) $BrCH_2-COOH$

(c) $(CH_3CO)_2O$ (d) $CHO-COOH$

50. The correct order of reactivity of PhMgBr with

(I)  (II) 

(III) 

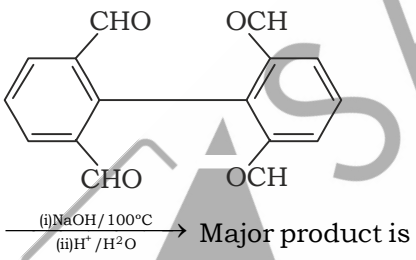
(a) (I) > (II) > (III) (b) (III) > (II) > (I)

(c) (II) > (III) > (II) (d) None of these

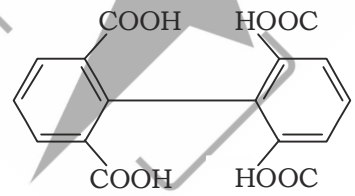
51. How will you convert butan-2-one to propanoic acid?

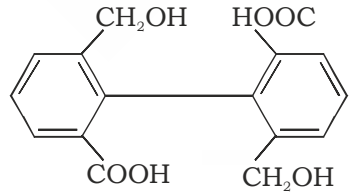
(a) Tollen's reagent (b) Fehling's solution

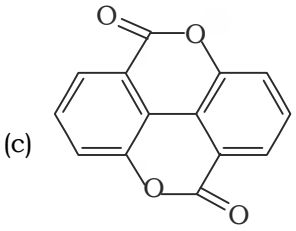
(c) $NaOH/I_2/H^+$ (d) $NaOH/NaI/H^+$

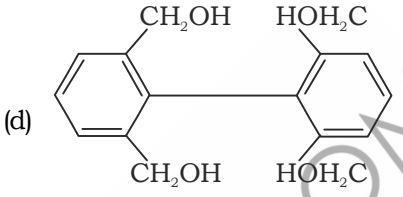
52. 

Major product is

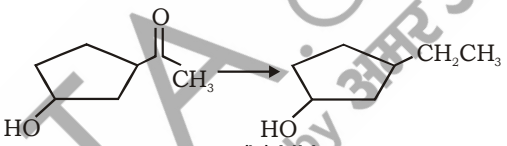
(a) 

(b) 

(c) 

(d) 

53. The appropriate reagent for the following transformation is



(a) Zn (Hg), HCl (b) NH_2NH_2, OH^-

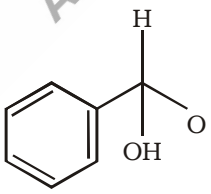
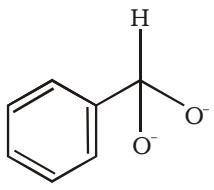
(c) H_2/Ni (d) $NaBH_4$

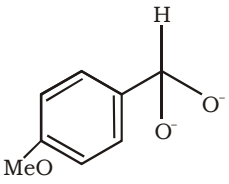
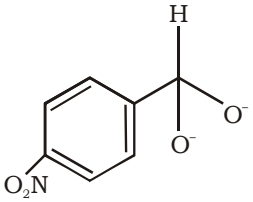
54. Benzoyl chloride is prepared from benzoic acid by

(a) Cl_2, hv (b) SO_2Cl_2

(c) $SOCl_2$ (d) Cl_2H_2O

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

(a)  (b) 

(c)  (d) 

56. In the Cannizzarro reaction given below, $2PhCHO \longrightarrow PhCH_2OH + PhCO_2^-$, the slowest step is

(a) the attack of ^-OH at the carbonyl group

(b) the transfer of hydride to the carbonyl group

(c) the abstraction of proton from the carboxylic acid

(d) the deprotonation of $PhCH_2OH$.

57. Hydrogenation of benzoyl chloride in the presence of pd on $BaSO_4$ gives

(a) benzyl alcohol (b) benzaldehyde

(c) benzoic acid (d) phenol

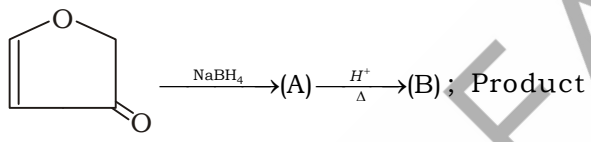
58. The enolic form of acetone contains
(a) 9 sigma bonds, 1 pi-bond and 2 lone pairs
(b) 8 sigma bonds, 2 pi-bonds and 2 lone pairs
(c) 10 sigma bonds, 1 pi-bond and 1 lone pair
(d) 9 sigma bonds, 2 pi-bonds and 1 lone pair

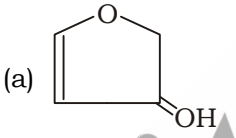
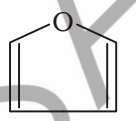
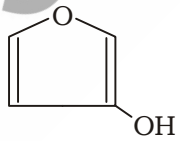
59. The compound that will not give iodoform on treatment with alkali and iodine is
(a) acetone (b) ethanol
(c) diethyl ketone (d) isopropyl alcohol

60. Which of the following is basic?
(a) CH_3-CH_2-OH
(b) $HO-CH_2-CH_2-OH$
(c) $C-O-O-H$
(d) CH_3NH_2

61. The reagent with which both acetaldehyde and acetone react easily is
(a) Fehling's reagent (b) Grignard reagent
(c) Schiff's reagent (d) Tollen's reagent

62. The Cannizzaro reaction is not given by
(a) trimethyl acetaldehyde
(b) acetaldehyde
(c) benzaldehyde
(d) formaldehyde

63.  ; Product (B) of the reaction is:

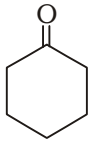
(a) 
(b) 
(c) 
(d) 

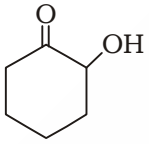
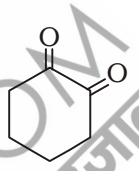
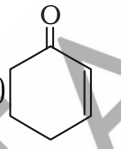
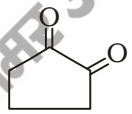
64. The reaction of $C_6H_5CH=CHCHO$ with $LiAlH_4$ gives:
(a) $C_6H_5CH_2CH_2CH_2OH$
(b) $C_6H_5CH=CHCH_2OH$
(c) $C_6H_5CH_2CH_2CHO$
(d) $C_6H_5CH_2CHOHCH_3$

65. $Ph-CH=CH-\overset{O}{\overset{\|}{C}}-CH_3 \longrightarrow$

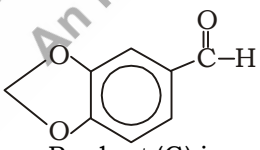
$Ph-CH=CH-CO_2H$

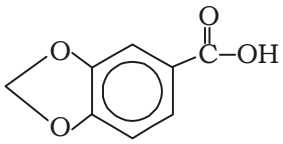
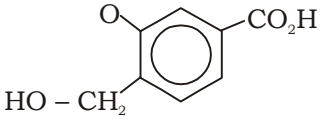
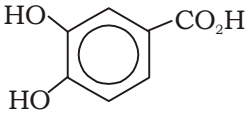
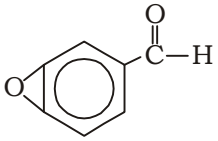
Above conversion can be achieved by:
(a) $KMnO_4, \Delta$ followed by H^+
(b) $I_2/NaOH$ followed by H^+
(c) H_2/Pt
(d) $LiAlH_4$

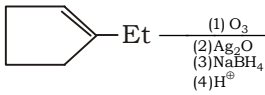
66.  ; Product (A) of the reaction is:

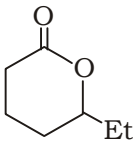
(a) 
(b) 
(c) 
(d) 

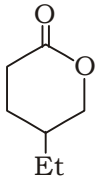
67. $R-\overset{O}{\overset{\|}{C}}-H \xrightarrow{R-NH_2} R-CH=N-R$. This reaction gives best yield at:
(a) pH 1 - 2 (b) pH 4 - 5
(c) pH 10 - 11 (d) pH 13 - 14

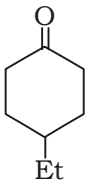
68.  Product (G) is:

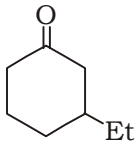
(a) 
(b) 
(c) 
(d) 

69. 

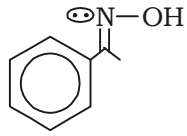
(a) 

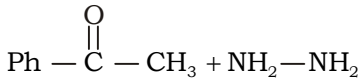
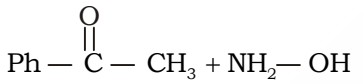
(b) 

(c) 

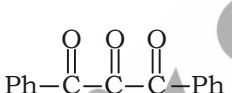
(c) 

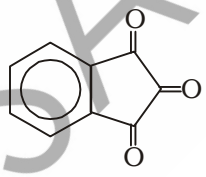
70. Carbonyl compounds can generally be converted to hydrocarbons by:
(a) H_2/Pt (b) $LiAlH_4$
(c) N_2H_4–KOH/ Δ (d) $K_2Cr_2O_7 - H_2SO_4$

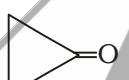
71. A + B 

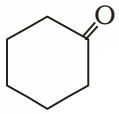
Reactant (A) and (B) is:
(a) $Ph - CH_2 - CH = O + NH_2 - OH$
(b) $Ph - CH = O + NH_2 - OH$
(c) 
(d) 

72. Which of the following does not form a stable hydrate on addition of H_2O?

(a) 

(b) 

(c) 

(d) 

TOPIC (3) PREPARATION OF CARBOXILIC ACID AND THEIR REACTION

73. Propionic acid is subjected to reduction with HI in the presence of little P, the product formed is
(a) ethane (b) propane
(c) butane (d) none of these

74. RCH_2CH_2OH can be converted into RCH_2CH_2COOH. The correct sequence of reagents is
(a) PBr_3, KCN, H^+ (b) PBr_3, KCN, H_2
(c) KCN, H^+ (d) HCN, PBr_3, H^+

75. Which of the following order is not correct
(a) formic acid > acetic acid > propionic acid (acid strength)
(b) cyclohexanol < Phenol < benzoic acid (acid strength)
(c) benzamide < cyclohexylamine < aniline (basic strength)
(d) $FCH_2COOH > ClCH_2COOH > BrCH_2COOH$

76. In the following groups. (I) – OAc, (II) – OMe, (III) – OSO_2Me and (IV) – OSO_2CF_2 the order of leaving group ability is
(a) I > II > III > IV (b) IV > III > I > II
(c) III > II > I > IV (d) II > III > IV > I

77. Vinegar is
(a) 6-10% CH_3COOH (b) 60-70% CH_3COOH
(c) 100% CH_3COOH (d) none of these

78. Preparation of β -hydroxy ester is favoured by
(a) Cannizzaro's reaction
(b) Reformatsky reaction
(c) Claisen condensation
(d) Wittig reaction

79. Which reaction is suitable for preparing α -Chloroacetic acid?
(a) Hell-Volhard Zelinsky reaction
(b) stephen's reaction
(c) perkin's reaction
(d) none of these.

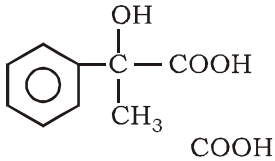
80. An ester (A) with molecular formula $C_9H_{10}O_2$ was treated with excess of CH_3MgBr and the compound so formed was treated with conc. H_2SO_4 to form olefin (B). Ozonolysis of (B) gave ketone with formula C_8H_8O which shows positive iodoform test. The structure of (A) is
(a) $C_6H_5COOC_2H_5$
(b) $CH_3OCH_2COC_6H_5$
(c) $CH_3CO - C_6H_5 - COCH_3$
(d) $C_6H_5COOC_6H_5$

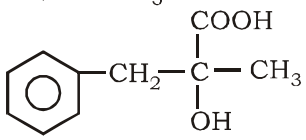
81. The reagent that can be used to distinguish between phenol and ethanoic acid is
(a) ammonical silver nitrate solution
(b) fehling solution
(c) sodium carbonate solution
(d) phenolphthalein

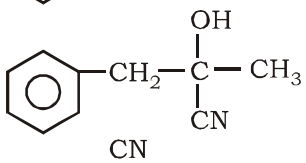
82. In a set of reactions acetic acid yielded a product S

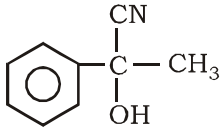
$$CH_3COOH \xrightarrow{SOCl_2} P \xrightarrow[Anhy.\ AlCl_3]{Benzene} Q \xrightarrow{HCN} R \xrightarrow{HOH} S$$

The structure of S would be:

(a) 

(b) 

(c) 

(d) 

83. Which carboxylic acid is most acidic?
(a) CH_3COOH (b) $(CH_3)_2CHCOOH$
(c) C_6H_5COOH (d) $HCOOH$

84. When $CH_2 = CH - COOH$ is reduced with $LiAlH_4$, the compound obtained will be
(a) $CH_3 - CH_2CHO$
(b) $CH_3 - CH_2 - COOH$
(c) $CH_2 = CH - CH_2OH$
(d) None of these

85. Select incorrect statement(s)
(a) Protonation increases electrophilic nature of the carbonly group
(b) Aldehydes are more reactive than carboxyl group
(c) Carbonyl compounds cannot form hydrogen-bonding with H_2O
(d) Chloral hydrate formation is possible due to hydrogen-bonding

86. $CH_3CH_2COOH \xrightarrow[red\ P]{Cl_2} A \xrightarrow{alc.\ KOH} B$.
What is B?
(a) CH_3CH_2COCl (b) CH_3CH_2CHO
(c) $CH_2 = CH - COOH$ (d) $ClCH_2CH_2COOH$

87. The acid S obtained through the following sequence of reactions is :

$$C_2H_5Br \xrightarrow{Alc.\ KOH} P \xrightarrow[CCl_4]{Br_2} Q \xrightarrow[(excess)]{KCN} R \xrightarrow{H_3O^+} S$$

(a) Succinic acid (b) Malonic acid
(c) Maleic acid (d) Oxalic acid

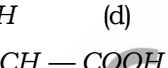
88. Consider the following reaction

$$\underset{Ester\ (A)}{C_4H_8O_2} \xrightarrow[(ii)\ H_3O^+]{(i)\ CH_3MgBr\ (excess)} \underset{Alcohol\ (B)}{C_4H_{10}O}$$

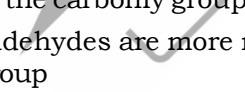
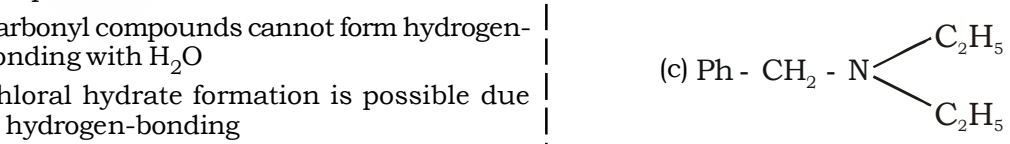
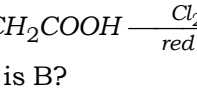
Alcohol (B) reacts fastest with Lucas reagent. Therefore, (A) and (B) respectively are :
(a) $CH_3COOC_2H_5, (CH_3)_3COH$
(b) $HCOOC_3H_7, (CH_3)_2CHOH$
(c) $C_2H_5COOCH_3, (C_2H_5)_3COH$
(d) $HCOOC_3H_7, (CH_3)_3COH$

89. Which of the following is correct order of rate of HCN addition to compound A → D
A. HCHO B. CH_3COCH_3
C. $PhCOCH_3$ D. PhCOPh
(a) A < B < C < D (b) D < C < B < A
(c) D < B < C < A (d) D < C < A < B

90. Arrange the following in order of increasing acidic strength

I. 
II. 
III. 

(a) I > II > III (b) III > II > I
(c) II > III > I (d) II > I > III

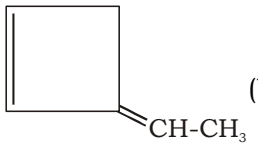
91. $Ph - C \equiv N \xrightarrow[Et_2O]{C_2H_5MgBr} \xrightarrow{H_3O^+}$ Product is:
(a) $Ph - COOH$
(b) 
(c) 
(d) 

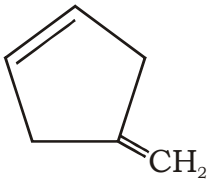
92. $CH_3 - CH = O \xrightarrow{PhMgBr} \xrightarrow{H_3O^+}$ Products is/are

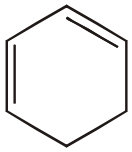
(a) Pair of enantiomers
(b) Pair of diastereomers
(c) Pair of structural isomers
(d) Only one optically active product is formed

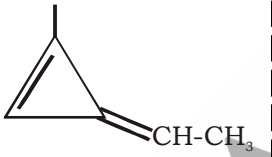
93. $X \xrightarrow{O_3/Zn,H_2O} H-\overset{O}{\overset{\|}{C}}-CH_2-\overset{O}{\overset{\|}{C}}-CH_2-\overset{O}{\overset{\|}{C}}-H + HCHO$

The structure of X may be:

(a) 

(b) 

(c) 

(d) 

94. I and II compounds are homologues. these can be distinguished by using:

(I) $HC \equiv C - CH_2 - \overset{O}{\overset{\|}{C}} - CH_3$

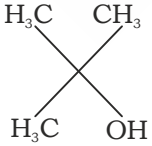
(II) $HC \equiv C - CH_2 - \overset{O}{\overset{\|}{C}} - CH_2CH_3$

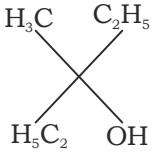
(a) Tollen's reagent (b) 2, 4-DNP
(c) Baeyer's reagent (d) I_2+NaOH

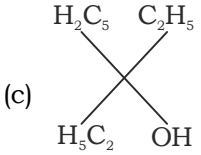
95. An enantiomerically pure acid is treated with racemic mixture of an alcohol having one chiral carbon. The ester formed will be

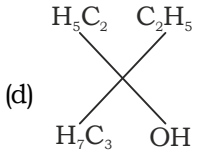
(a) optically active mixture
(b) pure enantiomer
(c) meso cmpound
(d) racemic mixture

96. Ethyl ester $\xrightarrow[\text{excess}]{CH_3MgBr} P$. The product P will be

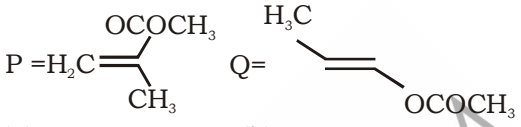
(a) 

(b) 

(c) 

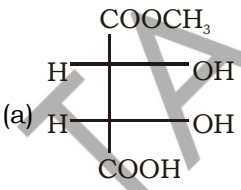
(d) 

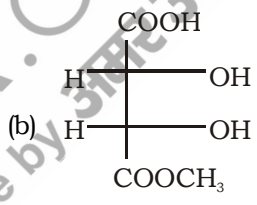
97. The product of acid hydrolysis of P and Q can be distinguished by

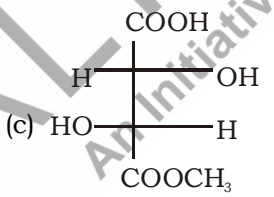


(a) Lucas reagent (b) 2,4-DNP
(c) Fehling's solution (d) $NaHSO_3$

98. The correct statement about the compounds A, B and C is

(a) 

(b) 

(c) 

(a) A and B are identical
(b) A and B are diastereomers
(c) A and C are enantiomers
(d) A and B are enantiomers

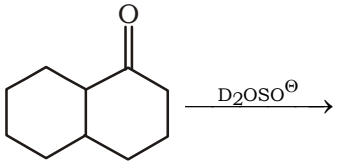
99. The organic product formed in the reaction is

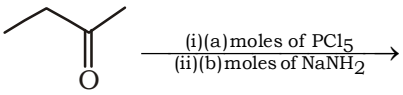
$C_6H_5COOH \xrightarrow[(ii)H^3O^+]{(i)LiAlH_4}$

(a) $C_6H_5CH_2OH$
(b) C_6H_5COOH and CH_4
(c) $C_6H_5CH_3$ and CH_3OH
(d) $C_6H_5CH_3$ and CH_4

INTEGER QUESTIONS

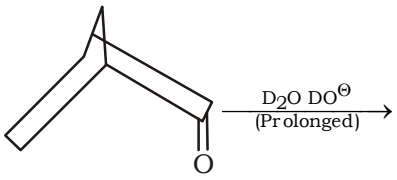
1. How many hydrogen is replaced by deuterium?



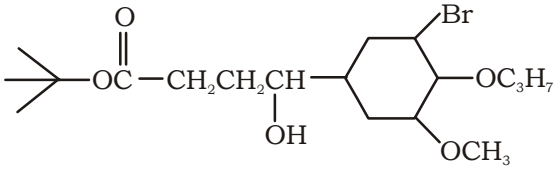
2. 

$CH_2-C\equiv C-CH_3$

Sum of (a + b = ?)

3. 

How many hydrogen replaced by (D)?

4. 

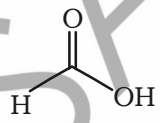
Total number of products obtained in above reaction is:

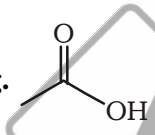
5. No. of isomer of carbonyl compound of $C_5H_{10}O$ give positive iodoform test (including stereoisomer) ?

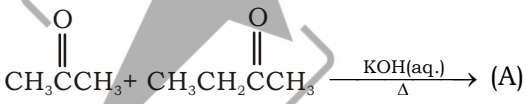
6. How many compound give positive Tollen's test?

a. D-Glucose, **b.** D-Fructose,

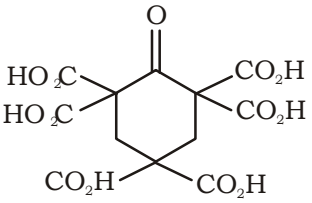
c.  , **d.** $PhCH_2OH$,

e. CH_3CH_3, **f.** 

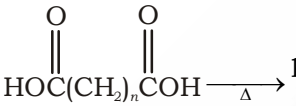
g. 

7. 

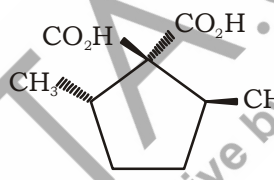
(A) = number of aldol condensation product (including stereoisomer).

8.  (*A*) moles of CO_2 evolved during given reaction?

So the value of (A) is

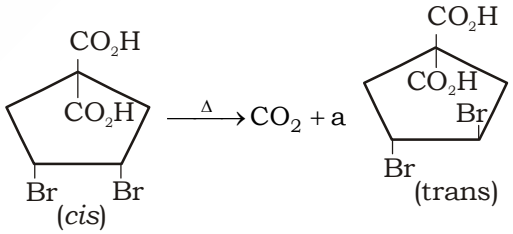
9.  product,

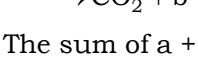
At what value of (*n*) given compound will not evolve CO_2 gas

10. 

How many product will be formed when above compound undergo de-carboxylation?

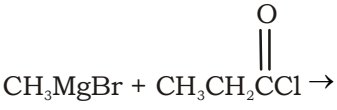
11. Products obtained in the given reactions are shown below.





The sum of a + b =

12. Total number of enol possible for the compound formed during given reaction will be (including stereoisomer):



UNIT : 8. ALDEHYDE, KETONE & CARBOXYLIC ACID

1.	d	2.	a	3.	c	4.	d	5.	b
6.	c	7.	d	8.	d	9.	b	10.	d
11.	c	12.	c	13.	b	14.	b	15.	b
16.	c	17.	b	18.	b	19.	a	20.	b
21.	b	22.	c	23.	d	24.	b	25.	b
26.	b	27.	c	28.	c	29.	a	30.	d
31.	d	32.	c	33.	b	34.	c	35.	a
36.	b	37.	b	38.	b	39.	a	40.	d
41.	c	42.	a	43.	b	44.	b	45.	c
46.	c	47.	c	48.	a	49.	c	50.	c
51.	c	52.	b	53.	b	54.	c	55.	d
56.	b	57.	b	58.	a	59.	c	60.	d
61.	b	62.	b	63.	b	64.	a	65.	b
66.	b	67.	b	68.	c	69.	a	70.	c
71.	d	72.	d	73.	b	74.	a	75.	c
76.	c	77.	a	78.	b	79.	a	80.	a
81.	c	82.	a	83.	d	84.	c	85.	c
86.	c	87.	a	88.	a	89.	b	90.	c
91.	d	92.	a	93.	b	94.	a	95.	a
96.	a	97.	c	98.	d	99.	a		

INTEGER QUESTIONS

1.	3	2.	3	3.	2	4.	2	5.	2
6.	4	7.	9	8.	5	9.	3	10.	1
11.	3	12.	3						