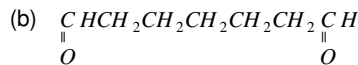


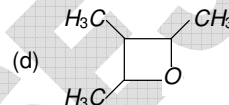
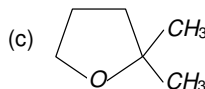
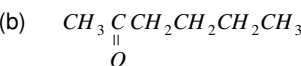
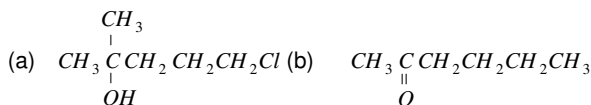
**Aldehyde and ketone Assignment - II**

1. A is formed by intramolecular aldol condensation of

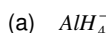


(d) None of these

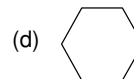
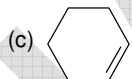
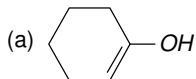
2.  $\text{CH}_3\overset{\text{O}}{\parallel}\text{CCH}_2\text{CH}_2\text{CH}_2\text{Cl} \xrightarrow{\text{CH}_3\text{MgBr}} \text{A}$ , A is



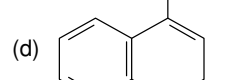
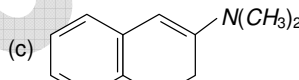
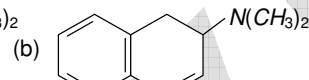
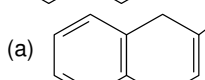
3.  $\text{CH}_3\text{CHO} + \text{LiAlH}_4 \rightarrow \text{CH}_3\text{CH}_2\text{OH}$  Nucleophile added in this reaction is



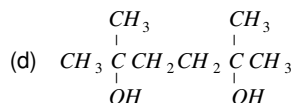
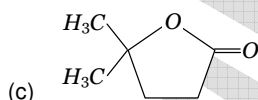
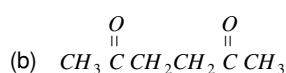
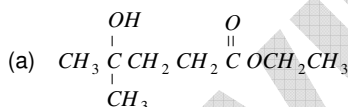
4.  $\xrightarrow{\text{H}_3\text{O}^+} \text{A}$ , A is



5. +  $(\text{CH}_3)_2\text{NH} \rightarrow \text{A}$ ; A is



6.  $\text{CH}_3\overset{\text{O}}{\parallel}\text{CCH}_2\text{CH}_2\overset{\text{O}}{\parallel}\text{COCH}_2\text{CH}_3 \xrightarrow[\text{(ii) H}_3\text{O}^+]{\text{(i) CH}_3\text{MgBr (one mol)}} \text{A}$ , A is formed in this reaction is



7.  $\text{CH}_3\text{CHO} + \text{H}_2\text{NOH} \rightarrow \text{CH}_3\text{CH}=\text{NOH}$ . The above reaction occurs at

(a)  $\text{pH} = 1$

(b)  $\text{pH} = 4.5$

(c) Any value of  $\text{pH}$

(d)  $\text{pH} = 12$

8. The conversion  $\text{CH}_3\text{CH}=\text{CHCHO} \rightarrow \text{CH}_3\text{CH}=\text{CHCH}_2\text{OH}$  can be effected with

(a)  $\text{Ni}/\text{H}_2$

(b) 9 BBN

(c)  $\text{Zn}/\text{Hg}/\text{HCl}$

(d) None of these

9. In the cannizzaro reaction  $2\text{C}_6\text{H}_5\text{CHO} \xrightarrow{\text{OH}^-} \text{C}_6\text{H}_5\text{CH}_2\text{OH} + \text{C}_6\text{H}_5\text{COO}^-$  the slowest step is

(a) The attack of  $\text{OH}^-$  on the carbonyl group

(b) The transfer of hydride to the carbonyl group

(c) The abstraction of a proton from the carboxylic acid

(d) The deprotonation of  $\text{C}_6\text{H}_5\text{CH}_2\text{OH}$

10. Conversion of acetone into 2,3-dimethylbutane-2,3-diol can be achieved by

(a)  $\text{Zn}/\text{Hg}/\text{HCl}$

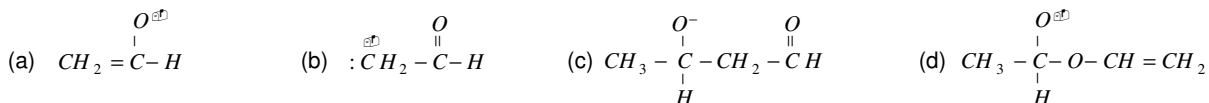
(b) Wolf-Kishner reduction

(c)  $\text{Mg}/\text{Hg}/\text{H}_2\text{O}$

(d) The conversion is not possible

11.  $\text{CH}_3-\text{CHO} \xrightarrow{\text{OH}^-} \text{CH}_3\text{CH}(\text{OH})\text{CH}_2\text{CHO}$  In the aldol condensation of acetaldehyde represented above, which of the following intermediate species are obtained

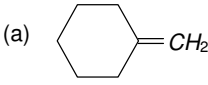
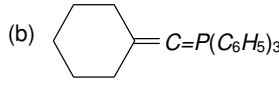
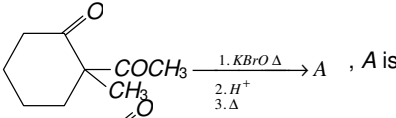
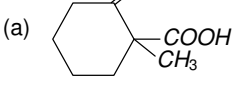
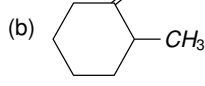
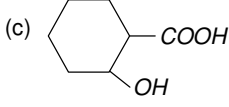
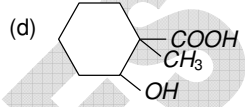
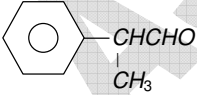
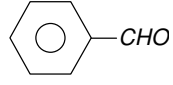
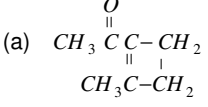
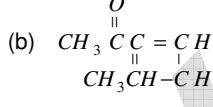
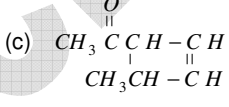
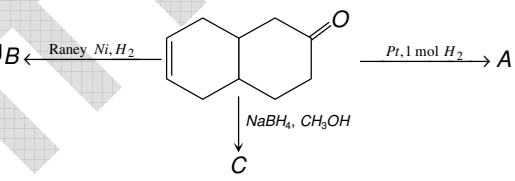
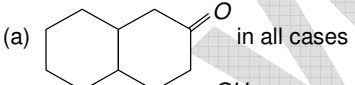



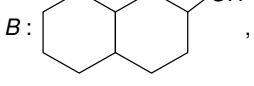
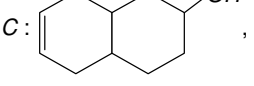
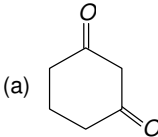
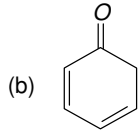
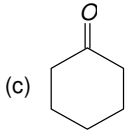
## GRAVITY CLASSES



12. Among the following compounds, which will react with acetone to give a product containing C = N – bond  
 $\text{C}_6\text{H}_5\text{NH}_2$  (I)     $(\text{CH}_3)_3\text{N}$  (II)     $\text{C}_6\text{H}_5\text{NHC}_6\text{H}_5$  (III)     $\text{C}_6\text{H}_5\text{NHNH}_2$  (IV)
- (a) Only I      (b) Only IV      (c) I and IV      (d) I, III and IV
13. If 3-hexanone is reacted with  $\text{NaBH}_4$  followed by hydrolysis with  $\text{D}_2\text{O}$ , the product will be  
 (a)  $\text{CH}_3\text{CH}_2\text{CH}(\text{OH})\text{CH}_2\text{CH}_2\text{CH}_3$       (b)  $\text{CH}_3\text{CH}_2\text{CD}(\text{OH})\text{CH}_2\text{CH}_2\text{CH}_3$   
 (c)  $\text{CH}_3\text{CH}_2\text{CH}(\text{OD})\text{CH}_2\text{CH}_2\text{CH}_3$       (d)  $\text{CH}_3\text{CH}_2\text{CD}(\text{OD})\text{CH}_2\text{CH}_2\text{CH}_3$
14. Under Wolf-Kishner reduction conditions, the conversion which may be brought about is  
 (a) Benzaldehyde into benzyl alcohol      (b) Cyclohexanol into cyclohexanone  
 (c) Cyclohexanone into cyclohexanol      (d) Benzophenone into diphenylmethane
15. On treatment with alkali, Glyoxal gives glycolic acid  $\text{OHC} - \overset{\overset{\text{O}}{\parallel}}{\text{C}}\text{H} \xrightarrow{\text{OH}^-} \text{HOCH}_2 - \text{COOH}$ . To which type does the above reaction belong  
 (a) Aldol condensation      (b) Knoevenagel condensation      (c) Cannizzaro reaction      (d) None of these
16. Identify X in the sequence  $\text{C}_4\text{H}_8\text{O} \xrightarrow[\text{X}]{\text{(i) CH}_3\text{MgI}} \text{C}_5\text{H}_{12}\text{O} \xrightarrow[575\text{ K}]{\text{Cu}} \text{C}_5\text{H}_{10}$   
 (a)  $\text{CH}_3\text{COCH}_2\text{CH}_3$       (b)  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CHO}$       (c)  $(\text{CH}_3)_2\text{CHCHO}$       (d)  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$
17. End product of the following sequence of reaction is  $\text{CH} \equiv \text{CH} \xrightarrow{\text{CH}_3\text{MgBr}} \xrightarrow{\text{CO}_2 / \text{H}_3\text{O}^+} \xrightarrow{\text{H}_2\text{SO}_4 / \text{H}_2\text{SO}_4} \xrightarrow[\Delta]{\text{Ag}_2\text{O}} \xrightarrow{\Delta}$   
 (a)  $\text{CH}_3\overset{\overset{\text{O}}{\parallel}}{\text{C}}\text{COOH}$       (b)  $\text{CH}_3\text{COOH}$       (c)  $\text{CH}_3\overset{\overset{\text{O}}{\parallel}}{\text{C}}\text{CHO}$       (d)  $\text{CH}_3\text{COOH}$
18. A compound possessing  $\alpha$ -hydrogen atom, in the presence of dilute alkali forms  $\beta$ -hydroxyaldehyde. This product on heating with dilute acid forms an unsaturated crotonaldehyde. The compound is  
 (a)  $\text{CH}_3\text{CHO}$       (b)  $\text{CH}_3\text{CH}_2\text{CHO}$       (c)  $\text{CH}_2 = \text{CHCHO}$       (d)  $\text{CH} \equiv \text{CCHO}$
19. Acetophenone can be prepared by  
 I. Oxidation of 1-phenylethanol  
 II. Reaction of benzaldehyde with methyl magnesium bromide  
 III. Friedel-Crafts reaction of benzene with acetyl chloride  
 IV. Distillation of calcium benzoate  
 Which of the above statements are correct  
 (a) II and III      (b) I and IV      (c) I and III      (d) III and IV
20. Ethanedial has which functional group(s)  
 (a) One ketonic      (b) Two aldehydic      (c) One double bond      (d) Two double bond
21. Contents of three bottles were found to react  
 (i) Neither with Fehling's solution nor with Tollen's reagent  
 (ii) Only with Tollen's reagent but not with Fehling's solution  
 (iii) With both Tollen's reagent and Fehling's solution  
 If they contained either ethanal (acetaldehyde) or propanone (acetone) or benzal (benzaldehyde), which bottle contained which  
 (a) In (i) benzal, in (ii) ethanal and in (iii) propanone      (b) In (i) benzal, in (ii) propanone and in (iii) ethanal  
 (c) In (i) propanone, in (ii) benzal and in (iii) ethanal      (d) In (i) propanone, in (ii) ethanal and in (iii) benzal
22. Reaction of acetaldehyde with  $\text{HCN}$  followed by hydrolysis gives a compound which shows  
 (a) Optical isomerism      (b) Geometrical isomerism      (c) Metamerism      (d) Tautomerism
23. Which of the following has the most acidic proton  
 (a)  $\text{CH}_3\text{COCH}_3$       (b)  $(\text{CH}_3)_2\text{C} = \text{CH}_2$       (c)  $\text{CH}_3\text{COCH}_2\text{COCH}_3$       (d)  $(\text{CH}_3\text{CO})_3\text{CH}$
24.  $\text{C}_6\text{H}_5\text{CHO} + \text{HCN} \rightarrow \text{C}_6\text{H}_5 - \overset{\overset{\text{H}}{|}}{\underset{\underset{\text{OH}}{|}}{\text{C}}} - \text{CN}$ . The product would be  
 (a) A racemate      (b) Optically active      (c) A meso compound      (d) A mixture of diastereomers
25. The most reactive compound towards formation of cyanohydrin on treatment with  $\text{KCN}$  followed by acidification is  
 (a) Benzaldehyde      (b) *p*-Nitrobenzaldehyde      (c) Phenyl acetaldehyde      (d) *p*-Hydroxybenzaldehyde

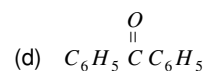
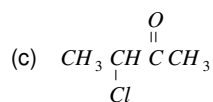
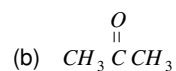
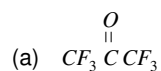


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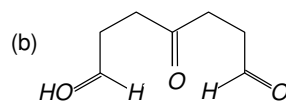
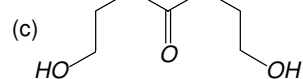
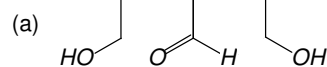
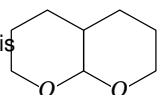
40. Product of the following reaction is  $\text{Cyclohex-2-en-1-one} + (\text{C}_6\text{H}_5)_3\text{P} = \text{CH}_2 \xrightarrow{\text{DMSO}}$
- (a)  (b)  (c) Both (a) and (b) (d) None of these
41.  , A is
- (a)  (b)  (c)  (d) 
42.  $\text{C}_2\text{H}_5\text{O}-\overset{\text{O}}{\parallel}{\text{C}}-\text{OC}_2\text{H}_5 \xrightarrow{2\text{CH}_3\text{MgBr}} \text{A}$ . Product A formed can
- (a) Give iodoform test (b) Further react with  $\text{CH}_3\text{MgBr} / \text{H}_3\text{O}^+$  to give *t*-butyl alcohol  
 (c) Be obtained by the ozonolysis of 2, 3-dimethyl-2-butene (d) All of the above
43. Which of the following gives aldol condensation reaction
- (a)  $(\text{CH}_3)_3\text{CCHO}$  (b)  $\text{CCl}_3\text{CHO}$  (c)  (d) 
44.  $\text{CH}_3-\overset{\text{O}}{\parallel}{\text{C}}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\overset{\text{O}}{\parallel}{\text{C}}-\text{CH}_3 \xrightarrow{\text{OH}^-, \Delta} \text{A}$  (formed by aldol condensation) is
- (a)  (b)  (c)  (d) None of these
45. At room temperature, formaldehyde changes to
- (a) Trioxane which does not reduce Tollen's reagent (b) Paraldehyde  
 (c) Hexose (d) None of these
46. What are A, B and C in the following 
- (a)  in all cases  
 (b)  in all cases  
 (c)  in all cases  
 (d) A:  , B:  , C: 
47. Aldehyde group can be protected
- (a) By acetal formation against attack by alkaline oxidising agents  
 (b) By mercaptal formation against attack by acidic oxidising agents  
 (c) Both (a) and (b)  
 (d) None of these
48. Enolisation is maximum in case of
- (a)  (b)  (c)  (d)  $\text{C}_6\text{H}_5-\overset{\text{O}}{\parallel}{\text{C}}-\text{C}_6\text{H}_5$

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49. Maximum hydration takes place of



50. Hydrolysis product of A (given) is



(d) Ring is stable hence no hydrolysis