

ALDEHYDES , KETONES & ACIDS-II PUC

1. In aldehydes and ketones, carbon of the carbonyl group is
 a) sp^3 -hybridized b) sp^2 -hybridized c) sp -hybridized d) unhybridized
2. Which of the following types of isomerism is exhibited by pentanone?
 a) Chain isomerism b) Position isomerism
 c) Functional isomerism d) All of these
3. Which one of the statements about $\text{HOH}_2\text{CCH}(\text{OH})\text{CHO}$ is not correct? It
 a) is an isomer of 1, 3-dihydroxypropanone
 b) contains a tertiary alcoholic group
 c) has the same empirical formula as glucose
 d) can show optical isomerism
4. Ketones ($\text{R}-\underset{\text{O}}{\underset{\parallel}{\text{C}}}-\text{R}'$) where $\text{R} = \text{R}'$ are alkyl group, can be obtained in one step by
 a) hydrolysis of esters b) oxidation of 1°
 c) oxidation of 2° alcohol d) reaction of alkyl halide with alcohols
5. Which of the following reaction can produce $\text{R}-\text{CO}-\text{Ar}$?
 a) $\text{ArCOCl} + \text{H}-\text{Ar} \xrightarrow{\text{AlCl}_3}$ b) $\text{RCOCl} + \text{ArMgX} \rightarrow$
 c) $\text{ArCOCl} + \text{RMgX} \rightarrow$ d) $\text{RCOCl} + \text{H}-\text{Ar} \xrightarrow{\text{AlCl}_3}$
6. Which of the following compounds does not react with sodium bisulphite?
 a) Benzaldehyde b) Acetophenone c) Actone d) Acetaldehyde
7. Which of the following will react with water
 a) CHCl_3 b) Cl_3CCHO c) CCl_4 d) $\text{ClCH}_2\text{CH}_2\text{Cl}$
8. Formaldehyde reacts with ammonia to give
 a) Hexamethylene tetramine b) Formaldehyde-ammonia
 c) Formalin d) Hydrobenzamide
9. Which of the following products is formed when benzaldehyde is treated with CH_3MgBr and the addition product so obtained is subjected to acid hydrolysis?
 a) A secondary alcohol b) A primary alcohol
 c) Phenol d) tert-Butyl alcohol
10. 1-Phenylethanol can be prepared by reaction of benzaldehyde with
 a) Methylbromide
 b) Ethyl iodide and magnesium
 c) Methyl bromide and aluminium bromide
 d) Methyl iodide and magnesium
11. From which of the following tertiary butyl alcohol is obtained by the action of methyl magnesium iodide?
 a) HCHO b) CH_3CHO c) CH_3COCH_3 d) CO_2
12. Oxidation of acetaldehyde with selenium dioxide produces
 a) Ethanoic acid b) Methanoic acid c) Glyoxal d) Oxalic acid
13. Methyl ketones are usually characterized through
 a) the Tollen's reagent b) the iodoform test
 c) the Schiff's test d) the Benedict's reagent
14. $(\text{CH}_3)_2\text{C} = \text{CHCOCH}_3$ 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

15. Which does not give iodoform test?
 a) CH_3COCH_3 b) CH_3OH c) $\text{CH}_3\text{CH}_2\text{OH}$ d) CH_3CHO
16. The reaction of $\text{C}_6\text{H}_5\text{CH}=\text{CHCHO}$ with NaBH_4 gives
 a) $\text{C}_6\text{H}_5\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$ b) $\text{C}_6\text{H}_5\text{CH}=\text{CHCH}_2\text{OH}$
 c) $\text{C}_6\text{H}_5\text{CH}_2\text{CH}_2\text{CHO}$ d) $\text{C}_6\text{H}_5\text{CH}_2\text{CHOHCH}_3$
17. If 3-hexanone is reacted with NaBH_4 followed by hydrolysis with D_2O , 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) $\text{CH}_3\text{CH}_2\text{CD}(\text{OD})\text{CH}_2\text{CH}_2\text{CH}_3$
18. Pinacolone is
 a) 2, 3-Dimethyl-2, 3-butanediol b) 3, 3-Dimethyl-2-butanone
 c) 1-Phenyl-2-propanone d) 1, 1 Diphenyl -1, 2-ethandiol
19. Which of the following will respond to Cannizzaro's reaction
 a) 2, 2-Dimethylpropanal b) Acetaldehyde
 c) Propionaldehyde d) Cinnamaldehyde
20. $\text{CH}_3\text{CHO} + \text{HCHO} \xrightarrow[\text{heat}]{\text{dil. NaOH}}$ A $\xrightarrow[\text{H}_3\text{O}^+]{\text{HCN}}$ B. The structure of compound B is
 a) $\text{H}_2\text{C}=\text{CH}-\underset{\text{OH}}{\text{CH}}-\text{COOH}$ b) $\text{H}_2\text{C}=\text{CH}-\underset{\text{CN}}{\text{CH}}-\text{OH}$
 c) $\text{H}_2\text{CH}_3-\underset{\text{CN}}{\text{CH}}-\text{OH}$ d) $\text{H}_3\text{C}-\underset{\text{OH}}{\text{CH}}-\text{COOH}$
21. Aromatic aldehydes, in the presence of cyanide ion as catalyst, are converted to acyloins, This reaction is called
 a) Perkin reaction b) Cannizzaro reaction
 c) Benzoin condensation d) Claisen condensation
22. The product/s of the following reaction,
 $\text{CHO} - \text{CHO} \xrightarrow{\text{OH}^-} ?$ is/are:
 a) CH_3OH b) $\text{HOCH}_2 - \text{COO}^-$ c) $\text{CH}_3\text{OH} + \text{HCOOH}$ d) $^- \text{OOC} - \text{COO}^-$
23. Predict the product 'B' in the sequence of reactions
 $\text{CH} \equiv \text{CH} \xrightarrow[\% \text{HgSO}_4]{30\% \text{H}_2\text{SO}_4} \text{A} \xrightarrow{\text{NaOH}} \text{B}$
 a) CH_3COONa b) CH_3COOH c) CH_3CHO d) $\text{H}_3\text{C}-\underset{\text{OH}}{\text{CH}}-\text{CH}_2-\text{CHO}$
24. The reaction of acetaldehyde with HCN followed by hydrolysis gives a product which exhibits
 a) Metamerism b) Tautomerism c) Enantiomerism d) Geometrical isomerism
25. In the reaction sequence
 $\text{Glycerol} \xrightarrow{\text{KHSO}_4 / \Delta} \text{X} \xrightarrow{\text{Zn-Hg/conc HCl} / \Delta} \text{Y} \xrightarrow{\text{NBS} / \text{CCl}_4} \text{Z}$; (Z) will be
 a) 1-Bromopropane b) 2-Bromopropane
 c) 3-Bromopropane d) 1, 2- Dibromopropane

47. In the Cannizzaro reaction given below, $2\text{Ph} - \text{CHO} \xrightarrow{\text{OH}^-} \text{Ph} - \text{CH}_2\text{OH} + \text{PhCO}_2^-$, the slowest step is
- the attack of OH^- at the carbonyl group
 - the transfer of hydride ion to the carbonyl group
 - the abstraction of a proton from the carboxylic acid
 - the deprotonation of $\text{Ph} - \text{CH}_2\text{OH}$
48. Aldol condensation, between which of the following compounds followed by dehydration gives methyl vinyl ketone?
- Formaldehyde and acetone
 - Formaldehyde and acetaldehyde
 - Two molecules of acetaldehyde
 - Two molecules of acetone
49. The cross aldol product formed when propanal acts as the electrophile and butanal as nucleophile is
- 3-hydroxy-2-methylpentanal
 - 3-hydroxy-2-methylhexanal
 - 2-ethyl-3-hydroxypentanal
 - 2-ethyl-3-hydroxyhexanal
50. A compound on treatment with 50% aqueous NaOH gives 2-furoic acid and furfuryl alcohol. What is the structure of the parent compound?

