

(a) Grignard reagent (b) Tollens' reagent

(c) Schiff's reagent (d) Fehling reagent

(14) Which is the hybridization of C and O atom in aldehydes and ketones?

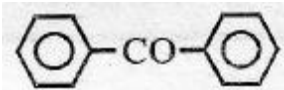
(a) sp^2 and sp^2 (b) sp^2 and sp^3 (c) sp^3 and sp^2 (d) sp and sp^2

(15) Which substance is used to preserve the dead bodies?

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

(16) Which of the following compounds can give acetoxime on condensation?

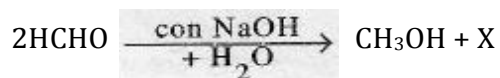
(a) Ethanal (b) Ethanol (c) Propanone (d) Propanal

(17) IUPAC name of  is

(a) Diphenyl ketone (b) Phenyl acetate

(c) Acetophenone (d) Benzophenone

(18) Identify the compound X in the following reaction



(a) HCOOH (b) CH_4 (c) CH_3COOH (d) CH_3CHO

(19) Which of the following compounds results into benzene nitrile on its dehydration?

(a) Benzamide (b) Benzoic acid

(c) Benzoyl chloride (d) Benzophenone

(20) Which product will be obtained by Grignard reaction, when formaldehyde reacts with ethyl magnesium iodide?

(a) Propan-1-ol (b) Propan-2-ol (c) Ethanol (d) Ethanoic acid

(21) On oxidation of which compound there is a decrease of one carbon atom in the product?

(a) CH_3CHO (b) CH_3-CH_2-OH (c) CH_3COCH_3 (d) CH_3COOH

(22) From the following whose reduction is performed by $LiAlH_4$ to get 1-phenyl-1-ethanol as a product?

(a) Benzoic acid (b) Benzaldehyde (c) Acetophenone (d) Phenyl acetate

(23) In Wolff Kishner reduction reaction which substances are used?

(a) NH_2-NH_2/HCl (b) NH_2-NH_2/KCl (c) NH_2NH_2/KOH (d) N_2H_4/K_2CO_3

(24) Which product is obtained when benzoic acid is reacted with $LiAlH_4$?

(a) Benzaldehyde (b) Toluene (c) Benzene (d) Benzyl alcohol

(25) Which product is obtained on reduction of benzaldehyde in presence of concentrated NaOH and water?

(a) Benzoic acid (b) Benzyl alcohol (c) Methyl benzoate (d) Toluene

(26) Which product is obtained on reaction of acetone with NH_2OH / acid?

(a) Acetoxime (b) Acetophenyl hydrazone
(c) Acetohydrazone (d) Propanone

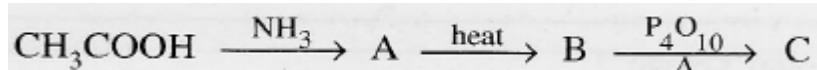
(27) On direct reduction of acetyl chloride with LiAlH_4 , which from the following products is obtained?

(a) $\text{CH}_3\text{-CH}_2\text{-Cl}$ (b) $\text{CH}_3\text{-CH}_2\text{-OH}$ (c) $\text{CH}_3\text{-CH}_3$ (d) $\text{CH}_3\text{-CHO}$

(28) Acetophenone on reduction with which substance forms ethyl benzene?

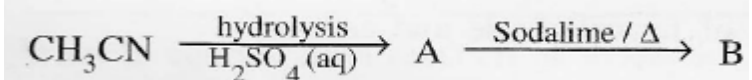
(a) Ni/H_2 (b) $\text{Zn-Hg}/\text{con. HCl}$ (c) $\text{Na}/\text{C}_2\text{H}_5\text{OH}$ (d) LiAlH_4

(29) Name of the end product in the following series of reaction:



(a) CH_4 (b) CH_3OH (c) CH_3CN (d) $\text{CH}_3\text{COONH}_4$

(30) Identify A and B in the reaction given below:



(a) Acetic acid, Methanol (b) Acetone, Methane
(c) Ethanoic acid, Ethane (d) Ethanoic acid, Methane

(31) Which of the following undergoes aldol condensation?

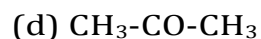
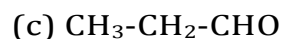
(a) Acetaldehyde (b) Formaldehyde
(c) Trimethyl acetaldehyde (d) Benzaldehyde

(32) Which of the following compounds does not give Cannizzaro's reaction?

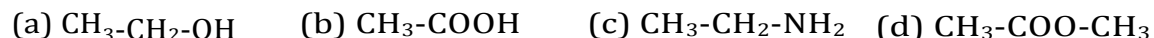
(a) Acetaldehyde (b) Formaldehyde
(c) Trimethyl acetaldehyde (d) benzaldehyde

(33) Which of the following has highest boiling point?

(a) $\text{CH}_3\text{-CH}_2\text{-COOH}$ (b) $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-OH}$



(34) Which product is obtained on hydrolysis of acetamide?



(35) Purification of acetaldehyde is done by which of the following reagents?



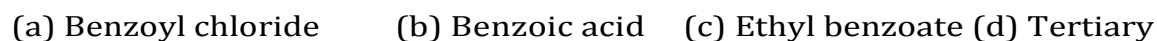
(36) What will be obtained if oxidation of acetophenone is carried out by strong oxidizing agent?



(37) Which type of alcohol is obtained if Grignard reagent is reacted with ethanol?



(38) Which substance on reduction by LiAlH_4 does not give phenyl methanol?



(39) When benzamide heated with Br_2 and NaOH then which of the following compounds is formed?



(40) In presence of which substance, acetic acid is heated at high temperature will give acetic anhydride?

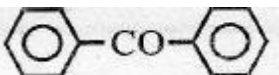


SEC B

(1) What are carbonyl compounds?

(2) What is general formula of aldehyde and ketone?

(3) Give structural formula and IUPAC name of formaldehyde and acetone.

(4) Give IUPAC name of  and $\text{CH}_3\text{-CHO}$.

(5) Give electronic structure of aldehyde and ketone.

(6) Why boiling points of aldehyde and ketone are lower than those of alcohol?

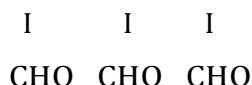
(7) Why formaldehyde is soluble in water?

(8) What is formalin? Give its uses.

(9) How Tollen's reagent is prepared?

- (10) What are the uses of acetone?
- (11) What can be detected in laboratory by Fehling's test?
- (12) Which reagents are used in Wolffkishner and Clemmenson's reduction reaction?
- (13) Write reaction of Clemrnenson's reduction reaction of acetophenone and benzaldehyde.
- (14) How would you obtain acetone in pure form?
- (15) What is condensation reaction of aldehyde?
- (16) Which aldehydes and ketones undergo aldol condensation?
- (17) Which aldehyde undergoes Cannizzaro's reaction?
- (18) Give dimeric structure of CH_3COOH .
- (19) Why the boiling points of carboxylic acids are higher?
- (20) Give electronic structure of carboxylic acid.
- (21) What is vinegar? Give its uses.
- (22) Define : Decarboxylation.
- (23) What happens when acetic acid is heated with PCl_5 ?
- (24) Complete the reaction : $\text{CH}_3\text{COOH} + \text{SOCl}_2 \xrightarrow{\Delta}$
- (25) Give structural formula of benzoyl chloride and benzamide.
- (26) How would you make acetic anhydride industrially?
- (27) What is esterification?
- (28) Which products are obtained when acetyl chloride in presence of pyridine reacts with acetic acid?
- (29) Give the reduction reaction of acetyl chloride.
- (30) What happens when acetic anhydride is heated with water?
- (31) State the reduction reaction of ethanoic anhydride.
- (32) Which products are obtained when ethyl acetate reacts with aqueous H_2SO_4 .
- (33) Carbonyl carbon and oxygen atoms lie in one plane, which studies confirmed this?
- (34) What is the dipole moment of aldehyde and ketone.
- (35) Which atoms of carbonyl group become Lewis acid and Lewis base respectively?
- (36) Which suffix is added to full name of cycloalkane of aliphatic cyclic aldehyde?

(37) Give IUPAC name of $\text{CH}_2 - \text{CH} - \text{CH}_2$



(38) Why aldehydes are more reactive than ketones?

(39) Why are aromatic aldehydes water insoluble?

(40) Which types of addition and substitution reactions are given by aldehyde and ketone?

(41) How is hemiacetal obtained?

(42) What is ketal?

(43) Which test is not given by aromatic aldehyde while aliphatic aldehyde gives?

(44) Which test is given by ketone compounds while aldehydes do not give?

(45) Which types of alcohol are obtained by reduction of aldehyde and ketone respectively?

(46) By which reduction reaction, aldehyde and ketone are converted into hydrocarbon?

(47) Write nitration reaction of aromatic aldehyde.

(48) State the sulphonation reaction of aromatic ketone.

(49) Mention the uses of benzaldehyde.

(50) Draw the resonance structures of $-\text{COOH}$

(51) Write the preparation of carboxylic acid from amide and nitrile.

(52) Write the preparation of carboxylic acid by Grignard's reaction.

(53) Give uses of carboxylic acids.

(54) State the halogenation reaction of carboxylic acid.

(55) State the reactions in which $-\text{COOH}$ (whole) is splitting.

Section : C Answer the following questions

(1) Give classification of carbonyl compounds.

(2) Explain physical properties of aldehydes and ketones.

(3) Explain silver mirror test.

(4) State the reactions of aldehyde and ketone with H_2 in presence of Ni.

(5) Give reaction of propanal and propanone with hydrazine in different media. State the types of reactions.

(6) Explain reaction to prepare acetic anhydride from acetaldehyde

- (7) How will you convert 2-propanone into 2-hydroxy 2-methyl propanoic acid.
- (8) Explain method to purify aldehyde or ketone.
- (9) State the condensation reactions of propanol with NH_3 and $\text{H}_2\text{N-Z}$.
- (10) Explain aldol condensation of ketone.
- (11) Explain cross aldol condensation of aldehydes.
- (12) State the cannizaro reaction of formaldehyde and benzaldehyde.
- (13) Explain boiling point and solubility of carboxylic acids.
- (14) What is decarboxylation? Explain with illustration.
- (15) State the reduction reactions of ethanoic acid and benzoic acid.
- (16) Explain preparation of acid chloride from carboxylic acid.
- (17) How is acetic anhydride prepared from sodium acetate and acetic acid?
- (18) Explain hydrolysis reactions of ester.
- (19) Explain melting point and boiling points of aldehyde and ketone.
- (20) Explain solubility of aldehydes and ketones in water.
- (21) Why formaldehyde is more reactive than acetaldehyde and ketone? Explain?
- (22) Explain effect of steric hindrance in aldehyde and ketone.
- (23) Write the reactions of propanone with NH_3 and $\text{H}_2\text{N-Z}$.
- (24) Explain Benedict's test.
- (25) Why carboxylic acid is more acidic than alcohol and phenol?
- (26) Explain effect of electron donating and attractive group on acidic strength of carboxylic acid.
- (27) Explain reaction having O-H splitting of carboxylic acid.
- (28) Write the reaction having C-OH splitting of carboxylic acid.
- (29) Write the reaction having -COOH (whole) splitting of carboxylic acid.
- (30) Explain nitration and bromination of carboxylic acid.
- (31) State the uses of carboxylic acids in different fields.
- (32) Give the following conversions in two steps
- (1) Benzaldehyde to benzyl alcohol
 - (2) Acetophenone to benzyl alcohol
 - (3) Acetophenone to styrene

- (4) Acetaldehyde to lactic acid
- (5) Acetone to 2-methyl-2-hydroxy propanoic acid
- (6) Acetaldehyde to acetamide
- (7) Acetaldehyde to acetyl chloride
- (8) Propanone to acetyl chloride
- (9) Propanone to acetic anhydride
- (10) Ethanal to acetic anhydride
- (11) Acetic anhydride to ethanol
- (12) Acetic anhydride to acetyl chloride
- (13) Ethanamide to ethanol
- (14) Acetonitrile to ethanol
- (15) Ethyl benzene to benzyol chloride
- (16) Benzamide to benzyl alcohol
- (17) Ethanol to ethanoyl chloride
- (18) Benzyl alcohol to benzoyl chloride
- (19) Benzaldehyde to benzoyl chloride
- (20) Benzaldehyde to benzene.

Section :D

- (1) Explain boiling point and solubility of aldehydes and ketones.
- (2) Explain methods to distinguish aldehydes and ketones.
- (3) Explain methods to prepare hydrocarbons from aldehydes and ketones.
- (4) Explain cross aldol condensation of propanal, ethanal and benzaldehyde.
- (5) How is acetyl chloride prepared? Explain the reactions.
- (6) How is acetic anhydride prepared? Explain the reactions.
- (7) Explain the strength of carboxylic acid on the basis of pK_a .
- (8) Explain solubility of carboxylic acid in water.
- (9) Explain reactions of propanal with H_2N-Z , put the different values of Z.

SEC E

- (1) Explain preparation of 1° , 2° and 3° alcohols from aldehydes and ketones.
- (2) Explain factors affecting on acidic strength of carboxylic acid.
- (3) Explain reaction of carboxylic acid having O-H and C-OH splitting.
- (4) Explain different methods to prepare carboxylic acids.

