

Biology holiday homework class 12th

1. Solve half yearly question paper in biology class notebook

2. Prepare an investigatory project on any one of the following:

1. Cancer

2. AIDS

3. Sickel cell anaemia

4. PKU

5. Down's syndrome

6. Turner's syndrome

KENDRIYA VIDYALAYA SANGATHAN

ZIET MUMBAI

SAMPLE PAPER-08

SUBJECT-CHEMISTRY THEORY(043)

Max. Marks:70

Time: 3 hours

General Instructions:

Read the following instructions carefully.

- (a) There are 33 questions in this question paper with internal choice.*
- (b) SECTION A consists of 16 multiple -choice questions carrying 1 mark each.*
- (c) SECTION B consists of 5 short answer questions carrying 2 marks each.*
- (d) SECTION C consists of 7 short answer questions carrying 3 marks each.*
- (e) SECTION D consists of 2 case - based questions carrying 4 marks each.*
- (f) SECTION E consists of 3 long answer questions carrying 5 marks each.*
- (g) All questions are compulsory.*
- (h) Use of log tables and calculators is not allowed.*

SECTION A

The following questions are multiple -choice questions with one correct answer. Each question carries 1 mark. There is no internal choice in this section.

1. Which of the following undergoes nucleophilic substitution exclusively by S_N^1 mechanism?
 - (a) Benzyl chloride
 - (b) Ethyl chloride
 - (c) Chlorobenzene
 - (d) Isopropylchloride

2. The magnetic nature of elements depends on the presence of unpaired electrons.
Identify the configuration of transition elements which shows highest magnetic moment?
- $3d^7$
 - $3d^5$
 - $3d^8$
 - $3d^2$
3. Zinc is coated over iron to prevent rusting of iron because.
- it is cheaper than iron
 - $E^{\circ}_{Zn^{2+}/Zn} = E^{\circ}_{Fe^{2+}/Fe}$
 - $E^{\circ}_{Zn^{2+}/Zn} > E^{\circ}_{Fe^{2+}/Fe}$
 - $E^{\circ}_{Zn^{2+}/Zn} < E^{\circ}_{Fe^{2+}/Fe}$
4. A first order reaction is 50% completed in 1.26×10^{14} s.
How much time would it take for 100% completion?
- 1.26×10^{15} s
 - 2.52×10^{14} s
 - 2.52×10^{28} s
 - Infinite
5. The slope in the plot of $\ln[R]$ vs. time gives in first order reaction.
- +k
 - +k/2.303
 - k
 - k/2.303
6. Arrange the following In increasing order of basic strength:
Aniline, p-nitroaniline and p-toluidine
- Aniline < p-nitroaniline < p-toluidine
 - Aniline < p-toluidine < p-nitroaniline
 - p-toluidine < p-nitroaniline < Aniline
 - p-nitroaniline < Aniline < p-toluidine
7. How many ions are produced from the complex $[Co(NH_3)_6]Cl_2$ in solution?
- 6
 - 4
 - 3
 - 2
8. How many alcohols with molecular formula $C_4H_{10}O$ are chiral in nature ?
- 1
 - 2
 - 3
 - 4
9. Which of the following species are involved in the carbylamine test ?
- R-NC
 - $NaNO_2 + HCl$
 - $COCl_2$
 - all of the above
10. For the reaction $A \rightarrow B$, the rate of reaction becomes three times when the concentration of A is increased by nine times. What is the order of reaction ?
- 1
 - 2
 - $\frac{1}{2}$

(d) 0

11. Amongst the following, the most stable complex is .

- (a) $[\text{FeCl}_6]^{3-}$
- (b) $[\text{Fe}(\text{NH}_3)_6]^{3+}$
- (c) $[\text{Fe}(\text{C}_2\text{O}_4)_3]^{3-}$
- (d) $[\text{Fe}(\text{H}_2\text{O})_6]^{3+}$

12. Which of the following alcohols gives 2-butene on dehydration by conc. H_2SO_4 ?

- (a) 2-methyl propene-2-ol
- (b) 2-methyl 1-propanol
- (c) Butane-2-ol
- (d) Butane 1-ol

13. Given below are two statements labelled as Assertion (A) and Reason (R)

Assertion (A): $\text{CH}_3\text{CH}_2\text{OH}$ can be converted into CH_3CHO by treatment with PCC.

Reason (R): PCC is a better reagent for oxidation of primary alcohols to aldehydes.

- (a) Both A and R are true and R is the correct explanation of A
- (b) Both A and R are true but R is not the correct explanation of A.
- (c) A is true but R is false.
- (d) A is false but R is true.

14. Given below are two statements labelled as Assertion (A) and Reason (R)

Assertion (A): Group 12 elements are not considered as transition metals.

Reason (R): Transition metals are those which have incompletely filled d shell in their compounds.

Select the most appropriate answer from the options given below:

- (a) Both A and R are true and R is the correct explanation of A
- (b) Both A and R are true but R is not the correct explanation of A.
- (c) A is true but R is false.
- (d) A is false but R is true.

15. Given below are two statements labelled as Assertion (A) and Reason (R)

Assertion (A): Acetanilide is less basic than aniline.

Reason (R): Acetylation of aniline results in decrease of electron density on nitrogen

Select the most appropriate answer from the options given below:

- (a) Both A and R are true and R is the correct explanation of A
- (b) Both A and R are true but R is not the correct explanation of A.
- (c) A is true but R is false.
- (d) A is false but R is true.

16. Given below are two statements labelled as Assertion (A) and Reason (R)

Assertion (A): All naturally occurring α - amino acids except glycine are optically active.

Reason (R): Most naturally occurring amino acids have L - configuration.

Select the most appropriate answer from the options given below:

- (a) Both A and R are true and R is the correct explanation of A
- (b) Both A and R are true but R is not the correct explanation of A.
- (c) A is true but R is false.
- (d) A is false but R is true.

SECTION B

This section contains 5 questions with internal choice in one question. The following questions are very short answer type and carry 2 marks each.

17. A first order reaction has a rate constant $1.15 \times 10^{-3} \text{S}^{-1}$. How long will 5g of this reactant take to reduce to 3g ?
18. Give reasons
- (a) C-Cl bond length in chlorobenzene is shorter than C-Cl bond length in $\text{CH}_3\text{-Cl}$
- (b) $\text{S}_{\text{N}}1$ reactions are accompanied by racemization in optically active alkyl halides.

OR

What happens when

- (a) $\text{CH}_3\text{-Cl}$ is treated with aqueous KOH
- (b) CH_3Br is treated with Mg in the presence of dry ether?
19. Write the reaction involved when D-glucose is treated with the following reagents.
- (a) Br_2 water
- (b) $\text{NH}_2\text{-OH}$
20. A complex of the type $[\text{M}(\text{AA})_2\text{X}_2]n^+$ is known to be optically active. What does this indicate about the structure of the complex ? Give one example of such complex.
21. (a) On increasing temperature, activation energy of a reaction decreases, why?
- (b) In some cases, it is found that a large number of colliding molecules have energy more than threshold energy, yet the reaction is slow why?

SECTION C

This section contains 7 questions with internal choice in one question. The following questions are short answer type and carry 3 marks each.

22. Write the equations for the following conversion
- (a) Phenol to Anisole
- (b) Salicylic acid to aspirin

(c) Ethyl alcohol to Ethoxyethane

23. (a) Although both $[\text{NiCl}_4]^{-2}$ and $[\text{Ni}(\text{CO})_4]$ have sp^3 hybridization, yet $[\text{NiCl}_4]^{-2}$ is paramagnetic and $[\text{Ni}(\text{CO})_4]$ is diamagnetic. Give reason. (atomic number of Ni=28)

(b) On the basis of crystal field theory, Write the electronic configuration for d^5 ion.

(i) $\Delta_0 > P$ (ii) $\Delta_0 < P$

24. Answer the following questions.

(a) Measurement of osmotic pressure method is preferred for the determination of molecular masses of macromolecules such as protein and polymers.

(b) Aquatic animals are more comfortable in the cold water than in warm water.

(c) Elevation of boiling point of 1 M KCl solution is nearly double than that of 1 M sugar solution.

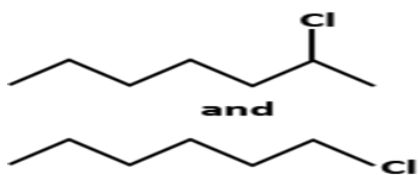
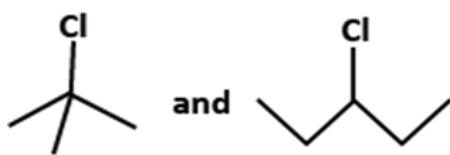
25. Give reason for the following

(a) pK_a value of aniline is more than that of methylamine.

(b) Aniline does not undergo Friedel-Crafts reaction.

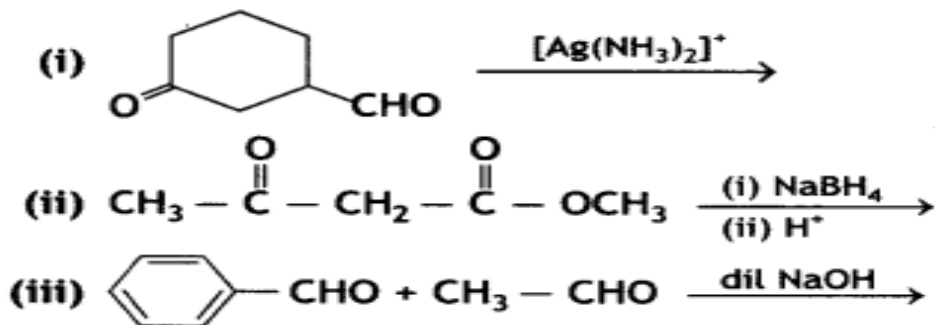
(c) Diazonium salts of aromatic amines are more stable than those of aliphatic amines.

26. In the following pairs of halogen compounds, which compound undergoes faster $\text{S}_\text{N}1$ reaction?



27. Calculate E°_{cell} for the following reaction at 298 K
 $2\text{Cr}(s) + 3\text{Fe}^{2+}(0.01\text{ M}) \rightarrow 2\text{Cr}^{3+}(0.01\text{ M}) + 3\text{Fe}(s)$ Given: $E_{\text{cell}} = 0.261\text{ V}$

28. Predict the main product of the following reactions:



SECTION D

The following questions are case -based questions. Each question has an internal choice and carries 4 (1+1+2) marks each. Read the passage carefully and answer the questions that follow.

29. **Read the passage given below and answer the following questions:**

Polysaccharides may be very large molecules. Starch, glycogen, cellulose, and chitin are examples of polysaccharides. Starch is the stored form of sugars in plants and is made up of amylose and amylopectin (both polymers of glucose). Amylose is soluble in water and can be hydrolyzed into glucose units breaking glycoside bonds, by the enzymes α - amylase and β -amylase. It is straight chain polymer. Amylopectin is a branched chain polymer of several D-glucose molecules. 80% of amylopectin is present in starch. Plants are able to synthesize glucose, and the excess glucose is stored as starch in different plant parts, including roots and seeds. The starch that is consumed by animals is broken down into smaller molecules, such as glucose. The cells can then absorb the glucose. Glycogen is the storage form of glucose in humans and other vertebrates, and is made up of monomers of glucose. It is structurally quite similar to amylopectin . Glycogen is the animal equivalent of starch. It is stored in liver and skeletal muscles. Cellulose is one of the most abundant natural biopolymers. The cell walls of plants are mostly made of cellulose, which provides structural support to the cell. Wood and paper are mostly cellulosic in nature.

Answer the following questions.

(a) Differentiate between Amylose and Amylopectine

(b) Define polysaccharides.

(c) Write chemical reaction to show that open structure of D-glucose contains the following.

a. Straight chain

b. Five alcohol group

OR

What is the hydrolysis of (a) Maltose (b) lactose

30. . Read the passage given below and answer the following questions:

Boiling point or freezing point of liquid solution would be affected by the dissolved solids in the liquid phase. A soluble solid in solution has the effect of raising its boiling point and depressing its freezing point. The addition of non-volatile substances to a solvent decreases the vapor pressure and the added solute particles affect the formation of pure solvent crystals. According to many researches the decrease in freezing point directly correlated to the concentration of solutes dissolved in the solvent. This phenomenon is expressed as freezing point depression and it is useful for several applications such as freeze concentration of liquid food and to find the molar mass of an unknown solute in the solution. Freeze concentration is a high quality liquid food concentration method where water is removed by forming ice crystals. This is done by cooling the liquid food below the freezing point of the solution. The freezing point depression is referred as a colligative property and it is proportional to the molar concentration of the solution (m), along with vapor pressure lowering, boiling point elevation, and osmotic pressure.

Give reasons of following

- (a) Cooking is faster in pressure cooker than in cooking pan.
- (b) Red blood cells (RBC) shrink when placed in saline water but swell in distilled water.
- (c) A decrease in temperature is observed on mixing ethanol and acetone.

OR

Potassium chloride solution freezes at a lower temperature than water.

SECTION E

The following questions are long answer type and carry 5 marks each.

All questions have an internal choice.

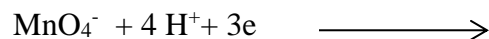
31. Attempt **any five** of the following:

- (a) Transition metal form complex compounds.
- (b) Actinoids show wide range of oxidation states.
- (c) E° value for (Zn^{+2}/Zn) is negative while that of (Cu^{+2}/Cu) is positive.
- (d) Sc^{3+} is colourless in an aqueous solution whereas Ti^{3+} is coloured.

(e) Complete and balance the following chemical equations.

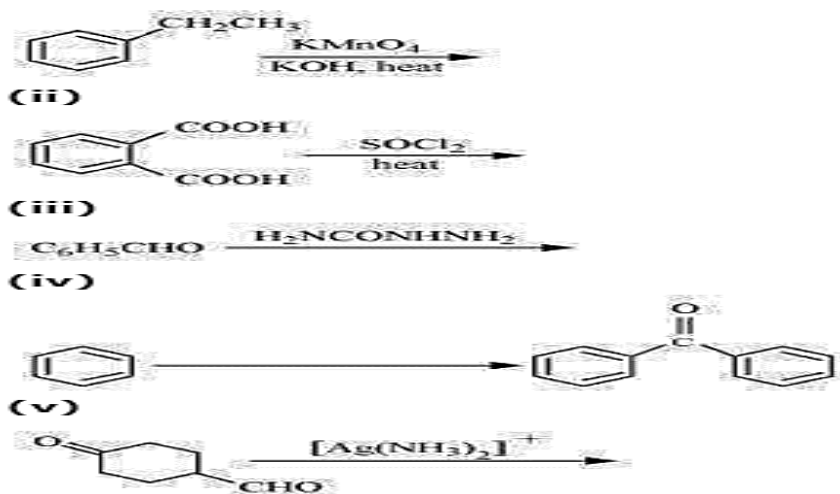


(f) Complete and balance the following chemical equations



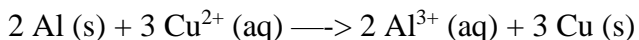
32. An organic compound (A) (molecular formula $\text{C}_8\text{H}_{16}\text{O}_2$) was hydrolysed with dilute sulphuric acid to give a carboxylic acid (B) and an alcohol (C). Oxidation of (C) with chromic acid produced (B). (C) on dehydration gives but-1-ene. Write equations for the reactions involved.

OR



33.(a) The conductivity of 0.001 M acetic acid is 4×10^{-5} S/m. Calculate the dissociation constant of acetic acid if λ^0_m for acetic acid is $390 \text{ S cm}^2 \text{ mol}^{-1}$.

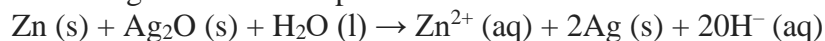
(b) Write Nernst equation for the reaction at 25°C :



(c) What are Secondary Batteries ? Give an example.

OR

(a) Following reaction takes place in the cell:



Calculate $\Delta_r G^\circ$ of the reaction. [Given: $E^\circ_{(\text{Zn}^{2+}/\text{Zn})} = -0.76 \text{ V}$,

$E^\circ_{(\text{Ag}^2+/\text{Ag})} = 0.80 \text{ V}$, $1 \text{ F} = 96,500 \text{ C mol}^{-1}$]

(b) How can you determine limiting molar conductivity (Λ_m°) for strong electrolyte and weak electrolyte?

Class - XII A

- 1) Relation ,function inverse trigonometric function:
- 2) Derivative and its applications
- 3) Matrix and determinants
- 4) Vector Algebra and probability
- 5) Integration and its applications

Explain the topic along with required information , Solve sums and write its applications in day to day life

SAMPLE PAPER (2022-23)
CHEMISTRY THEORY
(043)

CHAPTER-Aldehydes, Ketones and Carboxylic Acids

MM:70

Time: 3 hours

General Instructions:

Read the following instructions carefully.

- a) There are 35 questions in this question paper with internal choice.
- b) SECTION A consists of 18 multiple-choice questions carrying 1 mark each.
- c) SECTION B consists of 7 very short answer questions carrying 2 marks each.
- d) SECTION C consists of 5 short answer questions carrying 3 marks each.
- e) SECTION D consists of 2 case- based questions carrying 4 marks each.
- f) SECTION E consists of 3 long answer questions carrying 5 marks each.
- g) All questions are compulsory.
- h) Use of log tables and calculators is not allowed

SECTION A

The following questions are multiple-choice questions with one correct answer. Each question carries 1 mark. There is no internal choice in this section.

1. An aqueous NaOH solution is added to a mixture of benzaldehyde and formaldehyde to produce:
 - a. benzyl alcohol + sodium formate
 - b. sodium benzoate + methanol
 - c. benzyl alcohol + methanol
 - d. sodium benzoate + sodium formate
2. Formic acid and acetic acid are distinguished by
 - a. NaHCO_3
 - b. FeCl_3
 - c. Victor Mayer test
 - d. Tollen's reagent
3. Which of the following compounds do not react with NaHSO_3 ?
 - a. HCHO
 - b. $\text{C}_6\text{H}_5\text{COCH}_3$
 - c. CH_3COCH_3
 - d. CH_3CHO
4. Which compound is obtained when acetaldehydes are treated with a dilute solution of caustic soda?
 - a. Sodium acetate
 - b. Resinous mass
 - c. Aldol
 - d. Ethyl acetate

5. Which of the following has the most acidic hydrogen?
- hexane-2,4-dione
 - hexane-2,3-dione
 - hexane-2,5-dione
 - hexane-3-one
6. The formation of cyanohydrin from a ketone is an example of
- electrophilic addition
 - nucleophilic addition
 - nucleophilic substitution
 - electrophilic substitution
7. Which of the reactions below can result in ketones?
- Oxidation of primary alcohols
 - Oxidation of secondary alcohols
 - Dehydrogenation of tertiary alcohols
 - Dehydrogenation of primary alcohols
8. Which of the following compounds is formed when benzyl alcohol is oxidised with KMnO_4 ?
- CO_2 and H_2O
 - Benzoic acid
 - Benzaldehyde
 - Benzophenone
9. At 287K, which of the following is a gas?
- Propanal
 - Acetaldehyde
 - Formaldehyde
 - Acetone
10. The IUPAC name of $\text{CH}_3\text{-CH=CH-CHO}$ is:
- But-2-enal
 - Ethane
 - But-2-en
 - Buten-2-al
11. Propanone can be prepared from ethyne by
- passing a mixture of ethyne and steam over a catalyst, magnesium at 420°C
 - passing a mixture of ethyne and ethanol over a catalyst zinc chromite
 - boiling ethyne with water in the presence of HgSO_4 and H_2SO_4
 - treating ethyne with iodine and NaOH
12. The product of hydrolysis of ozonide of 1-butene are
- ethanol only
 - ethanal and methanal
 - propanal and methanol
 - methanal only
13. Which of the following compounds will undergo Cannizzaro reaction?
- CH_3CHO
 - CH_3COCH_3
 - $\text{C}_6\text{H}_5\text{CHO}$

d. $C_6H_5CH_2CHO$

14. Aldehydes that do not undergo aldol condensation are

1. Propanal
2. Trichloroethanal
3. 2-phenylethanal
4. Ethanal
5. Benzaldehyde

- a. 3 and 4 only
- b. 2 and 5 only
- c. 1, 2 and 3 only
- d. 2, 3 and 5 only

15. Given below are two statements labelled as Assertion (A) and Reason (R)

Assertion(A) : The boiling points of aldehydes and ketones are higher than hydrocarbons and ethers of comparable molecular masses.

Reason(R) : There is a relatively stronger molecular association in aldehydes and ketones.

Select the most appropriate answer from the options given below:

- a. Both A and R are true and R is the correct explanation of A
- b. Both A and R are true but R is not the correct explanation of A.
- c. A is true but R is false.
- d. A is false but R is true.

16. Given below are two statements labelled as Assertion (A) and Reason (R)

Assertion(A) : Compounds containing $-CHO$ group are easily oxidised to corresponding carboxylic acids.

Reason(R) : Carboxylic acids can be reduced to alcohols by treatment with $LiAlH_4$

Select the most appropriate answer from the options given below:

- a. Both A and R are true and R is the correct explanation of A
- b. Both A and R are true but R is not the correct explanation of A.
- c. A is true but R is false.
- d. A is false but R is true.

17. Given below are two statements labelled as Assertion (A) and Reason (R)

Assertion(A) : Aromatic aldehydes and formaldehyde undergo Cannizzaro reaction.

Reason(R) : Aromatic aldehydes are almost as reactive as formaldehyde.

Select the most appropriate answer from the options given below:

- a. Both A and R are true and R is the correct explanation of A
- b. Both A and R are true but R is not the correct explanation of A.
- c. A is true but R is false.
- d. A is false but R is true.

18. Given below are two statements labelled as Assertion (A) and Reason (R)

Assertion(A) : The α -hydrogen atom in carbonyl compounds is more acidic than phenol.

Reason (R): The anion formed after the loss of α -hydrogen atom is resonance stabilised.

Select the most appropriate answer from the options given below:

- a. Both A and R are true and R is the correct explanation of A
- b. Both A and R are true but R is not the correct explanation of A.
- c. A is true but R is false.
- d. A is false but R is true.

SECTION B

This section contains 7 questions with internal choice in two questions. The following questions are very short answer type and carry 2 marks each.

19. Fluoroacetic acid is a stronger acid than acetic acid.
20. Aldehydes are more reactive than Ketones towards nucleophilic additions.

OR

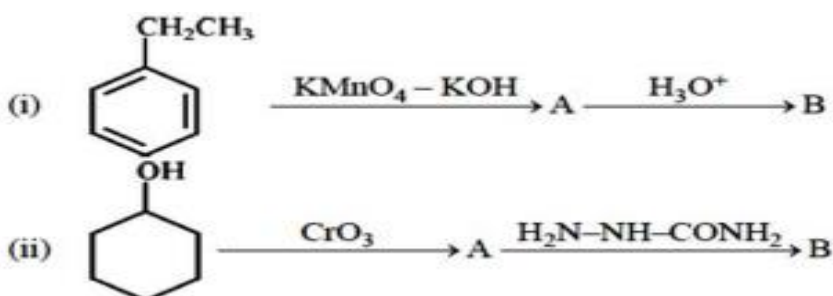
Carboxylic acids has higher boiling points than alcohols of same no. of carbon atoms.

21. What happens when:
- (a) Propanone is treated with methyl magnesium iodide and then hydrolysed, and
- (b) Benzene is treated with CH_3COCl in presence of anhydrous AlCl_3 ?

OR

What happens when:

- (a) Butanone is treated with methylmagnesium bromide and then hydrolysed, and
- (b) Sodium benzoate is heated with soda lime?
22. Arrange the following compounds in increasing order of their property as indicated :
- (i) $\text{F}-\text{CH}_2\text{COOH}$, $\text{O}_2\text{N}-\text{CH}_2\text{COOH}$, CH_3COOH , HCOOH — acid character
- (ii) Acetone, Acetaldehyde, Benzaldehyde, Acetophenone — reactivity towards addition of HCN
23. Write structures of compounds A and B in each of the following reactions :



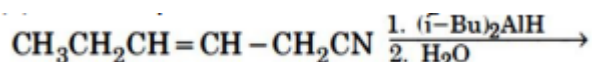
24. Give reasons :
- (i) Benzoic acid is a stronger acid than acetic acid.
- (ii) Methanal is more reactive towards nucleophilic addition reaction than ethanal.
25. Give a simple chemical test to distinguish between propanal and propanone.

SECTION C

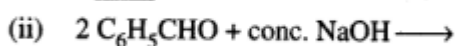
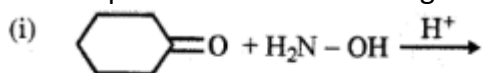
This section contains 5 questions with internal choice in two questions. The following questions are short answer type and carry 3 marks each.

26. Write the main product formed when propanal reacts with the following reagents:
- (i) 2 moles of CH_3OH in presence of dry HCl
- (ii) Dilute NaOH
- (iii) $\text{H}_2\text{N}-\text{NH}_2$ followed by heating with KOH in ethylene glycol.
27. Perform the following conversions in not more than two steps :
- (i) Benzoic acid to benzaldehyde
- (ii) Ethyl benzene to Benzoic acid

- (iii) Propanone to Propene
28. (a) Write the chemical equation for the reaction involved in Cannizzaro reaction.
 (b) Draw the structure of the semicarbazone of ethanal.
 (c) Why pKa of $F-CH_2-COOH$ is lower than that of $Cl-CH_2-COOH$?
29. Give any three answer from given a, b, c, d and e.
 (a) Write the chemical reaction involved in Wolf-Kishner reduction.
 (b) Arrange the following in the increasing order of their reactivity towards nucleophilic addition reaction: $C_6H_5COCH_3$, CH_3-CHO , CH_3COCH_3
 (c) Why carboxylic acid does not give reactions of carbonyl group.
 (d) Write the product in the following reaction



- (e) A and B are two functional isomers of compound C_6H_6O . On heating with NaOH and I_2 , isomer B forms yellow precipitate of iodoform whereas isomer A does not form any precipitate. Write the formulae of A and B.
30. Write the products of the following reactions:



OR

Give simple tests to distinguish between the following pairs of organic compounds

- (i) Pentan-2-one and Pentan-3-one
 (ii) Benzaldehyde and Acetophenone
 (iii) Phenol and Benzoic acid

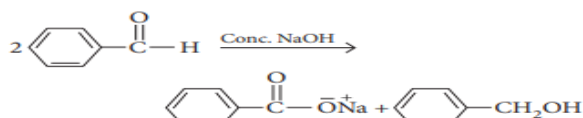
SECTION D

The following questions are case-based questions. Each question has an internal choice and carries 4 (1+1+2) marks each. Read the passage carefully and answer the questions that follow.

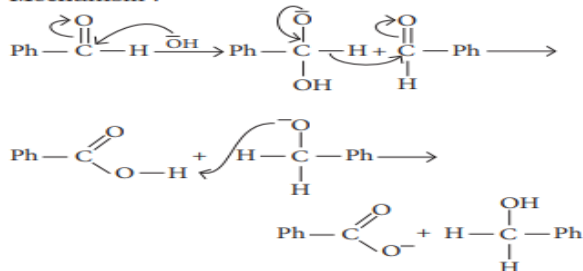
31. Read the passage given below and answer the following questions :

When an aldehyde with no α -hydrogen reacts with concentrated aqueous NaOH, half the aldehyde is converted to carboxylic acid salt and other half is converted to an alcohol. In other words, half of the reactant is oxidized and other half is reduced.

This reaction is known as Cannizzaro reaction



Mechanism :



The following questions are multiple choice questions. Choose the most appropriate answer :

(i) A mixture of benzaldehyde and formaldehyde on heating with aqueous NaOH solution gives

- (a) benzyl alcohol and sodium formate (b) sodium benzoate and methyl alcohol
 (c) sodium benzoate and sodium formate (d) benzyl alcohol and methyl alcohol.

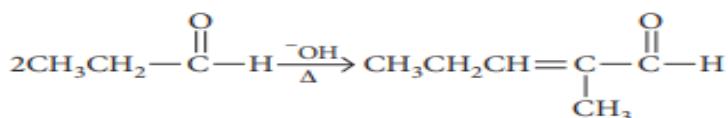
(ii) Which compounds will undergo Cannizzaro reaction?

(iii) Trichloroacetaldehyde is subjected to Cannizzaro's reaction by using NaOH. The mixture of the products contains sodium trichloroacetate ion and another compound. What will be the other compound?

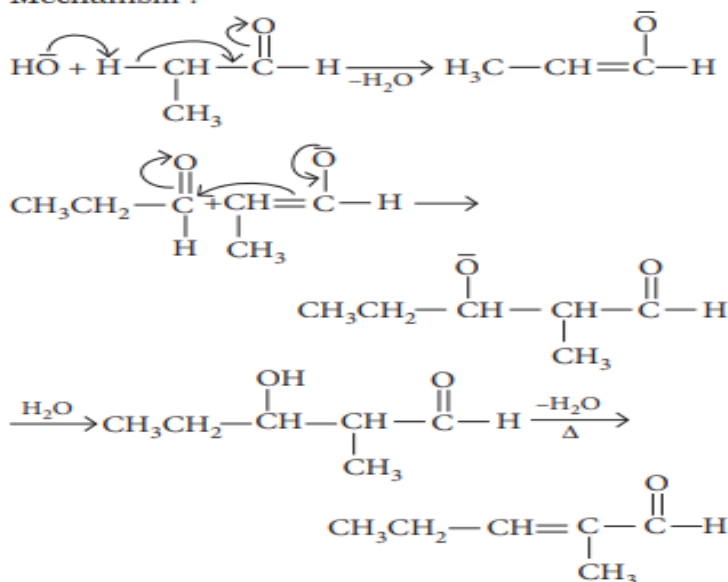
OR

will Cannizzaro reaction result in the formation of carbon-carbon bonds? explain

32. The addition reaction of enol or enolate to the carbonyl functional group of aldehyde or ketone is known as aldol addition. The β -hydroxyaldehyde or β -hydroxyketone so obtained undergo dehydration in the second step to produce a conjugated enone. The first part of the reaction is an addition reaction and the second part is an elimination reaction. The Carbonyl compound having α -hydrogen undergoes an aldol condensation reaction.



Mechanism :

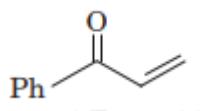


(i) The condensation reaction is the reverse of which of the following reaction?

- (a) Lock and key hypothesis
 (b) Oxidation
 (c) Hydrolysis
 (d) Glycogen formation

(ii) Which compounds would be the main product of an aldol condensation of acetaldehyde and acetone?

- (iii) Which combination of carbonyl compounds gives phenyl vinyl ketone by an aldol condensation?



OR

Write the condition for chemical reaction will undergo aldol condensation?

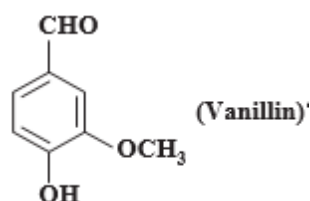
SECTION E

The following questions are long answer type and carry 5 marks each. Two questions have an internal choice.

33. (a) An organic compound 'A' having molecular formula $C_5H_{10}O$ gives negative Tollens' test, forms n-pentane on Clemmensen reduction but doesn't give iodoform test. Identify 'A' and give all the reactions involved.
 (b) Carry out the following conversions :
 (i) Propanoic acid to 2-Bromopropanoic acid
 (ii) Benzoyl chloride to benzaldehyde
 (c) How will you distinguish between benzaldehyde and acetaldehyde ?

OR

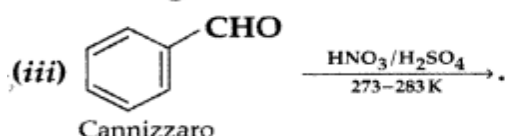
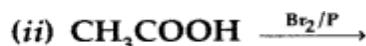
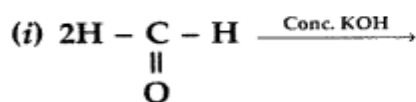
- (a) Convert benzaldehyde to Cinnamaldehyde?
 (b) What is IUPAC name of-



- (c) Write the structural formula of Isoamyl acetate.
 34. What happens when 2 moles of acetone are condensed in presence of $Ba(OH)_2$? Write chemical equation
 (b) What happens when acetic acid is heated with P_2O_5 ?
 (c) Why is alpha (α) hydrogen of carbonyl compounds acidic in nature ?
 (d) What happens when salicylic acid is heated with zinc dust?
 (e) Why is *p*-hydroxy benzoic acid more acidic than *p*-methoxy benzoic acid?

OR

- (a) Complete the following reactions:



- (b) Account for the following :
 (i) Aromatic carboxylic acids do not undergo Friedel-Crafts reaction.
 (ii) pK_a value of 4-nitrobenzoic acid is lower than that of benzoic acid.

35. Carry out the following conversions :

(i) P-nitrotoluene to 2-bromobenzoic acid

(ii) Propanoic acid to acetic acid

(b) An alkene with molecular formula C_5H_{10} on ozonolysis gives a mixture of two compounds, B and C. Compound B gives positive Fehling test and also reacts with iodine and NaOH solution. Compound C does not give Fehling solution test but forms iodoform.

Identify the compounds A, B and C.

OR

(a) Carry out the following conversions :

(i) Benzoic acid to aniline

(ii) Ethanal to but-2-enal

(b) An organic compound contains 69.77% carbon, 11.63% hydrogen and rest oxygen. The molecular mass of the compound is 86. It does not reduce Tollen's reagent but forms an addition compound with sodium hydrogen sulphite and gives positive iodoform test. On vigorous oxidation it gives ethanoic and propanoic acids. Derive the structure of the compound.