CHEMISTRY QUESTION BANK (CLASS 12TH)

YEAR 2016-2024

UNIT 1 (SOLUTION)

QUESTION CARRY1 MARKS

2016

1.Define Mass percentage?

2.Why is molality preferred than molarity?

3. Why concentrated H_2SO_4 is always diluted by adding $H_2SO_4$to water with constant stirring and not water to the acid?

4.Define Mole Fraction?

5. Define Osmotic Pressure?

6.Define Parts Per Million(ppm)?

7.The Basicity of H_3PO_2 is :

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

8.The Basicity of H_3PO_3 is :

(a) 2 (b) 3 (c) 1 (d) 0

9.Under what conditions Vant Hoff's Factor is less than unity?

2017

1. Define hypertonic Solution?

2019

1. Colligative property among the following is :

(a) Osmotic Pressure

(b) Boiling Point

(c) Vapour Pressure

(d) Viscosity

2. Define Osmotic pressure ?

2020

1. The solution showing positive deviation:

(a) have ΔV (mixing) = +ve

(b) have ΔH (mixing) = -ve

(c) form minimum boiling azeotropes

(d) have ΔV (mixing) = -ve

2. Why does the molality of the solution remain unchanged with temperature?

3. Unit of molarity is :

(a) Mol/L (b) Mol/Kg (c) ppm (d) Cm^3

2021

1. Ideal Solution obeys Raoult's law:

(a) When conc. of solution is less

(b)When conc. of solution is high

(c) Over entire range of conc.

(d) None of these.

2. S.I unit of mole fraction is :

(a) Mol/L (b) Mol (c) No units (d) None of these

3. Smoke is a .....type of colloidal system.

4. Colligative Property depends upon.....

5. The solution which do not obey Raoult's Law is :

(a) Ideal solution

(b) Non-ideal solution

(c) Both (a) and (b)

(d) None of these

6. Unit of molality is :

(a) Mol/L (b) Mol/Kg (c) Mol/Cm^3 (d) none of these.

7. Elevation in boiling point is a colligative property because it depends upon.....

8. Osmotic pressure is a colligative property because it depend upon.....

9. What is the reduction electrode potential value of SHE .

2022

1. The boiling point of a solvent containing non - volatile solute:

(a) is depressed (b) is elevated (c) does not change (d) none of these

2. Molal elevation constant is also called:

(a) Cryoscopic constant

(b) Gas constant

(c) Ebullioscopic constant

(d) Freezing point depression constant

3. Isotonic Solution have:

(a) same boiling point

(b) same vapour pressure

(c) same osmotic pressure

(d) same melting point

4. Colligative property among the following is:

(a) Osmotic pressure

(b) Boiling point

(c) Vapour pressure

(d) Viscosity

5. Colligative property depends upon :

(a) The nature of solute

(b) The nature of solvent

(c) Number of solute particles

(d) Number of solvent particles

6. Define Henry's Law.

7. Define Molality.

8. Define Van't Hoff factor.

9. Define Molarity.

2024

1. What is Van't Hoff factor?

2. Which of the following methods to express concentration has no units?

(a) Molarity (b) Molality (c) Mole Fraction (d)Normality

QUESTION CARRY 2 MARKS

2016

1. What is colligative properties? Prove that relative lowering in vapour pressure is a colligative property.

2. State raoult's Law for an ideal solution containing non- volatile solute. Why non ideal solutions show positive deviation from raoult's law?

3. Define boiling point. What is elevation in boiling point? How will you find the molecular mass of a solute by using their property?

2017

1. Explain that the depression in freezing point is a colligative property. Calculate the molar mass of solute with it ?

2.Explain that elevation in boiling point is a colligative property. Calculate the molar mass of asolute with it>

2018

1. Prove that relative lowering in the vapour pressure is a colligative property.

2. A solution is 25% water ,25% ethanol and 50% acetic acid by mass. Calculate the mole fraction of ethanol and acetic acid in the solution.

3. Define Colligative Properties and give its types .

4. Molality is preferred over Molarity .why?

5. Differentiate between Ideal and Non-Ideal Solution.

6. Define the term:

(a) Molarity (b) Molality

2019

1. 1.00g of a non-electrolyte solute dissolved in 50g of benzene lowered the freezing point of benzene by 0.40K. he freezing point depression constant of benzene is 5.12K Kg/mol . Find the molar mass of the solute?

2. 18 g of glucose is dissolved in 1kg of water in a sauce pan. At what temperature will water boil at 1.013 bar ? K_b for water is 0.52 K Kg/mol. water boils at 373.15K at 1.013 bar pressure .

3. Define Raoult's Law for a solution of volatile liquids.

2020

1. Concentrate nitric acid used in laboratory work is 68% nitric acid by mass in aquous solution. What should be the molarity of such sample of the acid if the density of the solution is 1.504gm/L.

2. A solution of glucose in water is labelled as 10% w/w. What would be the molality of the solution? (Molar mass of glucose = 180g/mol).

2021

1.Show that elevation in boiling point is a colligative property?

2.Explain by showing diagram, the behaviour of non-ideal solution showing +ve deviations from Raoult's Law.

3.Show that depression in freezing point is a colligative property.

4.Explain by showing diagram, the behaviour of non-ideal solution showing -ve deviations from Raoult's Law.

5.Show that relative lowering in vapour pressure is a colligative property.

6.Define the following terms: osmosis and osmotic pressure.

2022

1. What is relative lowering of vapour pressure? Prove that it is a colligative property.

2. What is depression in freezing point? Prove that it is a colligative property.

UNIT 2 (ELECTROCHEMISTRY)

QUESTION CARRY 1 MARKS

2016

1.Write Nernst equation for the cell reaction:

Mg(s)| Mg^{+} (1M) Cu^{+} (1M)|Cu(s)

2.Give two difference between emf and potential difference.

3.The unit of Specific conductance is:

(a) Ohm (b) $Ohm^{-1}cm^{-1}$ (c) Ohm^{-1}cm(d) Ohm^{2}

4.The units of cell constant is :

(a) $Ohm^{-1}cm^{-1}$ (b) Ohm^{-1}cm (c) cm (d) cm^{-1}

5. For the Reaction:

$Ni(s) + 2Ag^{+}(1M) \longrightarrow Ni^{2+}(1M) + 1Ag(s)$

Which Species get reduced ?

6. What is Primary Cell?

7. Consider the following reaction:

$Zn(s) + Cu^{+}(aq) \longrightarrow Zn^{2+}(aq) + Cu(s)$

With reference to the above reaction which one of the following is correct statements:

(a)Zn is reduced toZn^{2+}ions (b) Zn is oxidized to Zn^{2+}ions

(c) Zn^{2+}ions are oxidized to Zn (d) Cu^{2+} ions are oxidized to Cu

8. $Mg(s) + 2Ag^{+}(1M) \longrightarrow Mg^{2+}(1M) + 2Ag(s)$

Write the cell representation for the above reaction.

9. Write a short note on electrolytic refining of copper.

10. Define Molar Conductance.

2017

1. What is the basicity of H_3PO_4 ?

2. Explain Arrhenius equation?

3. In the Galvanic cell, which of the following statements is not correct?

(a) Anode is negatively charged (b) Cathode is Positively Charged

(c) Reduction takes place at the anode (d) Reduction takes place at the cathode

4. E^o_{cell} and ΔG^o are related as:

(a) $\Delta G^o = nF\ E^o_{cell}$ (b) $\Delta G^o = -nFE^o_{cell}$ (c) $\Delta G = -nFE^o_{cell}$ (d)) $\Delta G^o = -nFE^o_{cell} = 0$

5. The S.I unit of molar conductivity are:

(a) $S\ m^2\ mol^{-1}$ (b) $S\ m^{-1}\ mol^{-1}$ (c) $S\ m^{-2}\ mol$ (d) $S\ m^3\ mol^{-1}$

2018

1. The electrode potential of SHE fixed as:

(a) 0.34V (b) -0.44V (c) 0V (d) -0.76V

2. Explain Electrochemical Series.

3. Can we store 1M $CuSO_4$ in Zn vessel or not Why?

4. Define Faraday's Second Law?

5. Define Fuel Cell?

6. Define Primary Cell?

7. Define Secondary cells.

8. Define Faraday's First Law?

9. Why does Iron gain weight as a result of rusting?

10. With increase in temperature the conductivity of semiconductor:

(a) Decreases (b) Increases (c) No change (d) Increases then Decreases

2019

1. Isotonic solution have:

(a) same boiling point

(b) same vapour pressure

(c) same melting point

(d) same osmotic pressure

2. State Faraday's first law of electrolysis.

3.What is Galvanisation?

2020

1. Which of the following is correct regarding corrosion /rusting:

2. Iron rusts faster in saline water than in pure water

3. Less active metals are readily corroded

4. Air and moisture decreases corrosion

5. Corrosion occurs slowly at bends, scratches or cuts in the metals

6. In galvanization, metal plating on the iron to protect against corrosion is :

(a) Nickel plating (b) Copper plating (c) Tin plating (d) Zinc plating

7. What is semi permeable membrane?

2021

1.The S.I Units of conductance is:

(a) Siemens (b) S/m (c) Ampere (d) None of these.

2. A weak Electrolyte :

(a) Does not dissociate into ions

(b) Dissociate into ions incompletely

(c) Dissociate into ions completely
(d) None of these

3. Potential of an electrode means.....

4. Kohlrausch's law is used to calculate molar conductance at infinite dilation for .....electrolytes.

5. Define Galvanic Cell.

6. Define conductivity.

7. The potential of SHE is assumed as :

(a) Zero volt (b) 1.10 volt (c) 1 volt (d) None of these

8. Standard electrode potential means, the potential when..... flows in the internal circuit of a Galvanic cells.

9. What is the function of salt bridge?

10.The S.I Units of resistivity is :

(a) Ohm m (b) ohm/m (c) $ohm^{-1} m^{-1}$ (d) none of these

11. A strong Electrolyte :

(a) Does not dissociate into ions

(b) Dissociate into ions incompletely

(c) Dissociate into ions completely
(d) None of these

12. The S.I Units of conductivity is :

(a) S/m (b) Ohm (c) Ohm/Cm (d) None of these

2023

1.In Lead storage battery the anode is made of ……..

2. In dry cell, the cathode is made of……

3. In mercury cell, the anode is made of……

4. The S.I Units of conductivity is :

(a) S/m (b) Ohm (c) Ohm/Cm (d) None of these

2024

1. Anode in an electrochemical cell is that electrode on which the following is essential?

(a) +ve charge (b) -ve charge (c) oxidation occur (d) reduction ocurs

2.State Faraday's First Law of electrolysis.

3.Cathode in an electrochemical cell is that electrode on which the following is essential?

(a) +ve charge (b) -ve charge (c) oxidation occur (d) reduction ocurs

QUESTION CARRY 2 MARKS

2016

1.What is salt bridge? Describe its main functions.

2. Discuss the electrochemical theory of corrosion.

3. Write a Short note on Lead Storage Battery?

2017

1. Represent the cell in which the following reaction takes place:

$Mg(s) + 2Ag^{+}\ (0.0001M) \longrightarrow Mg^{+}\ (0.130M) + 2Ag\ (s)$

Calculate its E_{cell} ; if $E^{o}_{cell} = 3.17$ V .

2. What is corrosion ? Explain the electrochemical theory of rusting of iron.

3.Calculate the maximum work that can be obtained from daniell cell

$Zn \mid Zn^{2+}(aq) \mid\mid Cu^{2+}(aq) \mid Cu$

Given that $E^{o}_{Zn^{2+}|Zn} = 0.76$ V and $E^{o}_{Cu^{2+}|Cu} = 0.34$ V.

4. What is Standard Hydrogen Electrode? Explain its construction and working.

5. What is electrochemical or galvanic cell? Explain the construction and working of galvanic cell.

2018

1. Explain the working of Fuel Cell?

2. Explain Lead Storage Cell?

3. Explain Electrochemical Theory of Rusting of Iron?

4. Explain Ni-Cd Storage Cell?

5. Differentiate Between primary and Secondary Cells.

2019

1. Discuss the working of dry cell.

2. What is primary cell? How do they differ from secondary cells?

3. State Faraday's Law of Electrolysis .

4. Discuss the working of Lead storage cell?

5. Give four difference between e.m.f and potential difference .

2020

1.What is a semiconductor? Describe the two main types of semiconductors.

2. The standard electrode potential fordaniel cell is 1.1 V. calculate the standard gibbs energy for the reaction.

3.Explain the construction and working of dry cell.

4.Explain construction and working if Ni-Cd Storage cell.

5.Calculate the emf of the cell in which the following reaction takes place:

$Ni(s) + 2\ Ag(0.002M) \longrightarrow Ni(0.160M) + 2\ Ag(s)$

Given that $E^0_{cell} = 1.05V$

2021

1.State and explain Kohlrausch's Law .

2.How much charge in coulombs is required for oxidation of 2 mole of H_2O to O_2?

3.State and explain faraday's 1st law of electrolysis.

4. State and explain faraday's 2st law of electrolysis.

2023

1.Give electrochemical theory of rusting of iron.

2.Give the reaction at cathode and anode of lead storage battery during charging and discharging.

3. How much charge is required for the reduction of 1mole of Cu^{2+} to Cu?

4. Give construction and working of Dry Cell.

5.How much charge is required for the reduction of 1mole of Al^{3+} to Al?

2024

1. Explain the construction and working of a lead storage battery.

2. Represent the cell in which following reaction take place

$$Zn_{(s)} + Cu^{2+}_{(aq)}(1M) \longrightarrow Zn^{2+}_{(aq)} + Cu_{(s)}.$$

Calculate its $E_{(cell)}$ if $E^{o}_{(cell)} = 1.10V$

3. Explain the construction and working of dry cell.

UNIT 3 (CHEMICAL KINETICS)

QUESTION CARRY1 MARKS

2016

1.What is Activation Energy?

2. Give the units of rate constant for Zero Order Reaction.

3. What is instantaneous rate of reaction?

4.Give the example of Zero Order Reaction.

5.Define Average rate of a reaction.

2017

1. If the concentration are expressed in mol/L and time in sec, then the units of rate of constant for the first order reactions are :

(a) Mol/L sec^{-1} (b) Mol^{-1} L Sec^{-1} (c) Sec^{-1} (d) Mol^{2} L^{-2} Sec^{-1}

2. Explain Arrhenius equation.

3.If the rate of reaction between A and B is expressed as $K[A][B]^2$, the raction is :

(a) first order in A (b) second order in B (c) overall having third order (d) all are correct

4. Give the unit of rate constant for third-order reaction.

2018

1. What is the units of Rate Constant for 3rd order Reaction?

2.Rate of reaction= $K[H_2]^0 [Cl_2]^0$,according to rate law equation. Predict the order of reaction.

3.What is activation energy ?

4.What is the unit of rate constant for second order reaction?

5.Write Arrhenius equation.

6.Define order of reaction ?

7.Write the units of rate constant for zero order reaction.

2019

1. Rate constant depends upon :

(a) temperature (b) time (c) initial concentration (d) none of these

2.Define the term Rate constant.

3.Give the units of rate constant for 3rd order reaction.

4.The chemical reactions in which the reactants require high amount of activation energy are generally:

(a) slow (b) fast (c) instantaneous (d) none of these

5. Define the term Zero order reaction.

6.Give the units of rate constant for 2nd order reaction.

2020

1.The rate constant of a reaction has s^{-1} units. The reaction is of :

(a) 3^{rd} order (b) 1^{st} order (c) 0 order (d) 2^{nd} order

2.The rate constant of a reaction has same units as the rate of reaction. The reaction is of :

(a) Third order (b) Second order (c)First order (d) Zero order

3.What are activated complex?

4. What is rate determining step of a reaction?

2021

1. The order of reaction for the rate expression;

Rate = $K [A]^{\frac{1}{2}} [B]^{\frac{1}{2}}$ is:

(a) 1 (b) 2 (c) 3 (d) None of these

2.Unit of rate constant for first order reaction is .....

3.Molecularity of the reaction : $PCl_3 + Cl_3 \longrightarrow PCl_5$ is .....

4.The order of reaction for the rate expression;

Rate = K [A] [B]is:

(a) 2 (b) 1 (c) 3 (d) None of these

5.The unit of rate constant for second order reaction is .....

6.The order of reaction for the rate expression;

Rate = K $[A][B]^2$is:

(a) 2 (b) 3 (c) 1 (d) None of these

7.Molecularity of the reaction: $N_2 + 3H_2 \longrightarrow 2NH3$ is .....

8.Unit for rate constant of third order reaction is .....

9.Molecularity of the reaction: $H_2(g) + I_2(g) \longrightarrow 2HI(g)$ is .....

2023

1.The units of rate constant for second order reaction are……

2.The order of reaction for the rate expression; Rate = K $[A]^{\frac{3}{2}}$ $[B]^1$ is…….

3.What is Pseudo First order reactions. Give an example.

4.Calculate the half life period of a 1^{st} order reaction whose rate constant is 200 sec^{-1}.

5.The units of rate constant for first order reaction are……

6.The order of reaction for the rate expression; Rate = K $[A]^{1/2}$ $[B]^{3/2}$ is…….

7.The units of rate constant for Zero order reaction are……

8.The order of reaction for the rate expression; Rate = K $[A]^1$ $[B]^2$ is…….

2024

1. The unit of reaction rate constant are mol/L/sec. What is the order of this reaction?

(a) 2 (b) 0 (c) 1 (d) 4

2. Define Activation Energy?

3. The unit of reaction rate constant are mol^{-1} L/sec. What is the order of this reaction?

(a) 2 (b) 0 (c) 1 (d) 3

QUESTION CARRY 2 MARKS

2016

1.For the reaction:

$C_{12}H_{22}O_{11} + H_2O \xrightarrow{H+} C_6H_{12}O_6 + C_6H_{12}O_6$

Write : (a) Rate of reaction expression.

(b) Molecularity.

2. Drive an expression for half-life period of 1sr order reaction.

3. Derive the integrated rate equation for the rate constant for the first order reaction.

2017

1. What is Zero Order reaction ? Derive integrated rate equation for Zero order reactions.

2. What do you mean by half- life period of a reaction? Derive an expression for the half - life period for the first - order reaction.

3.Derive an integrated rate equation for the first-order reaction.

2018

1. Drive Integrate Rate law equation for First Order Reaction.

2. Differentiate between Order and Molecularity of the reaction.

2019

1.Define the following term :

(a) Activation Energy

(b) Collision Frequency

2.The rate constant K of a reaction increases four folds when the temperature changes from 300K to 320K. Calculate the energy of activation for this reaction.(Given : log 4 = 0.6021R = 8.314 J/K/Mol)

3.Define the following terms:

(a) Half-Life period

(b) Activated Complex

4.The rate of a chemical reaction doubles for an increase of 10K in absolute temperature from 298K. Calculate E_a (log 2 = 0.3010)

2021

1. A first order reaction is found to have rate constant K= 7.39×10^{-5} sec^{-1} . Find Half life of this reaction (log 2 =0.3010).

2. Derive integrated rate equation for zero order reaction.

3. At 373K, the half-life for thermal decomposition of N_2O_5 is 4.6 sec. and it is first order reaction . calculate specific rate constant at this temperature.

4.Derive integrated rate equation for first order reaction.

5. A first order reaction is found to have rate constant, K =5.5×10^{-14} s^{-1}. Find half-life of the reaction.

6.Drive equation for half-life period for first order reaction.

2022

1.Calculate the half-life period of a 1^{st} order reaction where the specific rate constant is 4 $years^{-1}$.

2. Drive an expression for half-life period in case of 1^{st} order reaction.

3. Calculate the half-life period of the first order reaction where the specific rate constant is 2min^{-1}.

4. Drive integrated rate equation for first order reaction.

2023

1.Derive integrated rate equation for rate constant for zero order reaction.

2.What is first order reaction? Give an example.

3.Derive integrated rate equation for rate constant for first order reaction.

4.What is meant by half life time period of a reaction? Derive an expression for half-life tie period of a first order reaction.

5.Calculate the half-life period of a 1^{st} order reaction whose rate constant is 4 $years^{-1}$.

6.Calculate the half-life period of the first order reaction whose rate constant is 2min^{-1}

2024

1. A first order reaction is found to have a rate constant,K = 5.5×10^{-14} sec^{-1}. Find the half-life of the reaction.

2. Calculate half-life of a first order reaction whose rate constant is $200s^{-1}$.

UNIT 4 (D AND F BLOCK ELEMENTS)

QUESTION CARRY 1 MARKS

2016

1.Which of the following element has maximum electron gain enthalpy:

(a) F (b) Br (c) Cl (d) I

2. What are coinage Metals?

3. What is Misch Metals?

4. $La(OH)_3$ is more basic than $Lu(OH)_3$.Explain.

2017

1. Explain whether Cu^+ is paramagnetic or diagmagnetic ?

2. What are coinage metal? Give Example.

3. Transition elements behave as good catalysts. Explain.

4. Transition elements form coloured compounds. Explain?

5. Draw the geometry of dichromate ($Cr_2O_7^{2-}$) ion.

6. Noble gases have almost Zero or large positive electron gain enthalpies. Why?

7. Ions of Zn^{2+} is colourless while Cu^{2+} is coloured. Why?

8. Draw the structure of chromate ion.

2018

1. Zn, Cd and Hg are soft. Why?

2. d-block elements form complexes. Why?

3. Define Transition Elements?

4. Give the general electronic configuration of f-block elements.

5. What are pseudohalogens?

6. Which does not belong to first transition series?

(a) Fe (b) Ag (c) V (d) Cu

7. Interhalogens are more reactive than Halogen. Why?

8. Which group of elements in modern periodic table is known as Chalcogens?

9. Cu(I) compounds are colourless whereas Cu(II) compounds are coloured. Why?

10.Many Transition elements act as good Catalyst. Why?

11.Explain the d-block elements form alloys?

2019

1. What is Misch metal?

2. Write the electronic configuration of Mn^{2+}.

3. Define transition elements?

4. Give the general electronic configuration of f-block elements.

5. Draw the structure of Dichromate ion.

6. Give the electronic configuration of Cu^{+}.

7. What are Coinage metals ?

8. Complete the reaction:

$K_2Cr_2O_7 \xrightarrow{\Delta}$

9. Why Zn, Cd and Hg is not regarded as transition metals?

2020

1.The electronic configuration of a transition element **X** in +3 oxidation state is [Ar] $3d^5$. What is its atomic number :

(a)25 (b) 26 (c)27 (d) 24

2.Which of the following block of elements do not come under transition elements:

(a)d-block (b) s-block (c) p-block (d) both (a) and (b)

3.The magnetic nature of elements depends on the presence of unpaired electrons. Identify the configuration of transition elements, which show highest magnetic moment:

(a) $3d^7$ (b) $3d^5$ (c) $3d^8$ (d) $3d^2$

4.Why electron gain enthalpy of fluorine is less than that of chlorine?

5.Why halogens have high electron gain enthalpy?

6.Why are halogens Coloured?

7.What are interhalogen compounds?

8.Why Flourine is the strongest oxidising agent?

9.What is the action of heat on $K_2Cr_2O_7$? Write reaction only.

10.Why the transition metals generally form interstitial compounds?

11.Why Hg is not regarded as transition element?

2021

1.What are interhalogen compounds?

2.Why interhalogen compounds are more reactive than component halogens?

3.Why Flourine usually show oxidation state of -1 ?

4.Why Noble gases are monoatomic in nature?

5.Why Halogens are coloured ?

6.Why noble gases have low melting point and boiling point.

2022

1.Which of the following has highest ionization enthalpy :

(a) P (b) N (c) As (d) Sb

2.General electronic configuration of group 16 elements is:

(a) $ns^2\ np^1$ (b) ns^2np^2 (c) ns^2np^4 (d) ns^2np^6

3.Maximum covalency of sulphur is :

(a) 2 (b) 4 (c) 6 (d) 5

4.Which of the following have maximum electron gain enthalpy:

(a) F (b) Cl (c) Br (d) I

5.General electronic configuration of group 18 elements is:

(a) $ns^2 np^1$ (b) ns^2np^2 (c) ns^2np^3 (d) ns^2np^6

6.Why halogens are most reactive elements?

7.Why Hg is not regarded as transition element?

8.f-block elements involve progressive filling of:

(a) d-orbitals (b) s-orbitals (c) p-orbitals (d) f-orbitals

9.Why the transition metals generally form interstitial compounds?

10.Write the electronic configuration of Ce^{4+} ion.

11.Why Cd is not regarded as transition element.

12.Why transition metals and their compounds are known for catalytic activity?

13.Which of the following blocks of elements fall under inner transition elements?

(a) f-block (b) d-block (c) s-block (d) p-block

14.The first transition series Sc to Zn involve filling of:

(a) 3d-orbitals (b) 4d-orbitals (c) 4f-orbitals (d) none of these

2023

1.Which does not belong to first transition series?

(a)Fe (b) v (c) Ag (d) Cu

2.Write the Valence Shell Electronic Configuration of Lutetium.

3.Draw the structure of Permanganate ion.

4.The number of unpaired electrons in Ni^{2+} ion are:

(a)0 (b) 4 (c) 8 (d) 2

5.What are inner transition elements?

6.What is Lanthanoid Contraction?

7.Sc^{3+} ion is coloureless while Cr^{3+} ion is Coloured. Why?

8.Draw the structure of Manganate ion.

9.What are transition elements?

10.Why Zn^{2+} salts are white while Cu^{2+} salts are blue?

11.Which of the following is not a d-block elements:

(a) Hg (b) Po (c) Ni (d) W

12.The number of unpaired electrons in Fe^{3+} ion are:

(a) 2 (b) 4 (c) 5 (d) 3

13.Which does not belong to first transition series?

(a) Y (b) Tc (c) Cd (d) Cu

14.The number of unpaired electrons in Fe^{3+} ion are:

(a) 0 (b) 4 (c) 5 (d) 3

2024

1. The silver UK coins are an alloy of copper with :

(a) Silver (b) Aluminum (c) Nickel (d) Chromium

2. The first ionization enthalpy of Xenon is almost identical with that of :

(a) Molecular oxygen

(b) Molecular Nitrogen

(c) Molecular Fluorine

(d) Molecular Hydrogen

3. What is coinage metals? Write their names.

4. Why are melting point of transition metals very high?

5.What was the first compound of noble gases?

(a) $XeOFe_4$ (b) XeO_2F_2 (c) $XePtF_6$ (d) XeF_6

6.Which of the following has equal unpaired electrons with MAnganese (Z=25)?

(a) Zn^{2+} (b) Cu^{+} (c) Fe^{3+} (d) Fe^{2+}

QUESTION CARRY 2 MARKS

2016

1. (a) Give the electronic configuration of d-block elements.

(b) Out of Fe^{2+} and Fe^{3+} which is more paramagnetic and why?

2. What is Actinoid Contraction? Explain it?

3. (a) What are Transition Elements?

(b) Why Transition Metals shows variable Oxidation State?

4.What are causes of Lanthanoid Contraction? Discuss.

5. (a) Write the general electronic configuration of f-block elements.

(b) Why are Cd^{2+} salts white?

6.What are Lanthanoid contraction? What are its Consequences?

2017

1. What is lanthanoid contraction? What is the causes of lanthanoid contraction?

2. How will you prepare potassium permanganate from pyrolusite ore? Give the reactions of the steps involved.

3.Give at least four point of difference between Lanthanoid and Actinoids.

2018

1. Define Lanthanoid Contraction. Give its causes.

2. Most of the transition elements are coloured. Why?

3. Transition elements show variable oxidation states. Why?

4. Explain Variable Oxidation State of d-block elements?

5. Explain : (a) Ferromagnetism (b) Ferrimagnetisms

2019

1. Why transition elements form coloured complexes?

2. What is Lanthanoid Contraction and write its consequences?

3. Why transition elements shows variable oxidation state?

4. Why transition metals act as good catalysts?

5. Why transition metals form alloys?

6. Indicate the steps in the preparation of $K_2Cr_2O_7$ from chromite ore .

2022

1.Copper is regarded as transition metal though it has completely filled d-orbital. Explain.

2.What are interstitial compounds? why are such compounds well known as transition metals?

3.Explain why many transition metals and their compounds act as good catalysts?

4.What are transition elements? Gives the general electronic configuration of transition elements.

5.Gold (Aurum) is regarded as transition metal though it has completely filled d-orbital. Explain.

6.What is lanthanoid contraction? What is its significance?

7.Why F-block elements placed at the bottom of the periodic table? Write general electronic configuration of f-block elements.

8.Why do the transition elements exhibit higher enthalpies of atomization?

9.Explain why transition metals generally form coloured compounds?

2023

1.The transition metals and their compounds act as good catalyst. Why?

2.The transition metals generally form coloured compound. Why?

3.Why transition metal shows variable oxidation state?

2024

1. Draw the structure of dichromate and chromate ion.

UNIT 5(COORDINATION CHEMISTRY)

QUESTION CARRY1 MARKS

2016

1.Draw the structure of H_3PO_4.

2.Give the structure of $XeOF_2$.

3.The oxidation number of iron in K_4 $[Fe(CN)_6]$ is :

(a) +1 (b) +2 (c) +3 (d) 0

4.Using VSEPR theory Draw the structure of BrF_3.

5.The correct IUPAC name of $[Pt(NH_3)_2 Cl_2]$ is:

(a) diaminedichloridoplatinum(II)

(b)diaminedichloridoplatinum(0)

(c) diaminedichloridoplatinum(IV)

(d) chloridodiammineplatinum(IV)

6.In which of the following complexes the metal ion is in zero oxidation state:

(a) $Mn(CO)_{10}$ (b) $Zn_2[Fe(CN)_6]$ (c) $[Cu(NH_3)_4]Cl_2$ (d) $[Ag(NH_3)_2]Cl$

2017

1. Write the IUPAC name of K_3 $[Fe(CN)_5$ NO].

2. Explain Zwitter ion with example.

2018

1. Draw the shape of ClF_3.

2. ClF_3 exists but FCl_3 does not. Why?

3. Molecular N_2 is unreactive. Why?

4. Draw the structure of XeF_4.

5. H_3PO_4 is Diprotic . Why?

2019

1. Draw the structure of XeF_2.

2020

1.Correct IUPAC name of coordination compound $[Co(NH_3)_6]Cl_3$ is:

(a) Hexamine cobalt(III) chloride

(b) Hexamine cobalt(II) chloride

(c) Hexamine cobalt(III) trichlorides

(d) None of these

2.Ammonia is regarded as a good complex agent. Explain why?

3.What is the basicity of H_3PO_2?

4.Draw the structure of $XeOF_4$.

5.Nitrogen exist as diatomic molecule and phosphorous exist as tetra atomic P_4. Explain**.**

6.On the basis of VBT explain the geometry and magnetic behaviour of $[Co(NH_3)_6]^{3+}$ complex ion.

7.Draw the structure of XeO_2F_2.

8.Write IUPAC name of $[Co(NH_3)_6]Cl_3$.

9.Why does OF_6 not exist but SF_6 exists?

2021

1. Draw the structure of XeF_4.

2022

1.Give the geometry of XeF_4 and XeF_6.

2.Draw the structure of $XeOF_4$.

3.The molecules which are non-super impossible on their mirror image are called :

(a) Chiral (b) Achiral (c) Anomers (d) none of these

4.The correct IUPAC name of coordination compound $[Co(NH_3)_5Cl]Cl_2$ is :

(a) Pentaammine Chloridocobalt(III) Chloride

(b) Chloridopentaammine cobalt (II) Chloride

(c) Pentaammine Chloridocobalt (II) Chloride

(d) None of these

2023

1.The correct oxidation number of Cr in $[Cr(H_2O)_6]^{3-}$ ion is :

(a) +6 (b) +3 (c) +1 (d) None of these.

2.Chlorophyll is the co-ordination compound of:

(a) Co (b) Mg (c) Fe (d) Ni

3.The correct oxidation number of Co in $[Co(CN)_6]^{3-}$ is :

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

2024

1. What is the IUPAC name of $K_3[Cr(C_2O_4)_3]$?

2. Draw the structure of H_3PO_2.

3. Why oxygen exist as O_2 whereas sulphur as S_8 ?

4. Explain the structure of XeO_3.

QUESTION CARRY2 MARKS

2016

1.Explain the Geometry and Magnetic behaviour of $[Co(NH_3)_6]^{3+}$ complex according to Valence Bond Theory.

2.On the basis of Valence Bond Theory, Explain geometry and magnetic behaviour of $[Fe(CN)_6]^{4-}$ ion.

2017

1. Define Ligands. Give one example each of bidentate and hexadentate ligands.

2.Write the formula of coordination compound, poyassium tetracyanocuprate(II).

3. On the basis of Valence Bond Theory, Explain that $[Fe(CN)_6]^{3-}$ is weakly paramagnetic while ferrocyanide ion $[Fe(CN)_6]^{4}$ is diamagnetic.

4. Explain about the following with examples:

(a) Ambidentate Ligands

(b) Chelate

2018

1.Discuss the Magnetic behaviour, Nature ,geometry of $[NiCl_4]^{2-}$ ion on the basis of VBT.

2.Discuss the geometry, nature and magnetic behaviour of $[Cr(NH_3)_6]^{+3}$ ion on the basis of VBT.

3.Discuss the geometry, nature and magnetic behaviour of $[Fe(CN)_6]^{4-}$ ion on the basis of VBT.

4. All the bonds in PCl_5 are not equivalent why?

5.SF_6 exist but OF_6 does not. why?

2019

1. On the basis of VBT explain the geometry and magnetic behaviour of $[NiCl_4]^{2-}$.

2. On the basis of VBT explain the geometry and magnetic behaviour of $[Cr(NH_3)_6]^{3+}$.

3. Draw the structure of XeF_6 and P_4O_6

2020

1.On the basis of valence bond theory explain the geometry and magnetic behaviour of $[NiCl_4]^{2-}$ complex ion.

2.Explain on the basis of valence bond theory, the geometry and hybridization of $[CoF_6]^{3-}$ ion.

2022

1.Explain on the basis of valence bond theory, the geometry and hybridization of $[NiCl_4]^{2-}$ ion.

2.Explain on the basis of valence bond theory, the geometry and hybridization of $[CoF_6]^{3-}$ ion.

2023

1.On the basis of VBT, explain the geometry and magnetic behaviour of $[NiCl_4]^{2-}$ ion.

2.On the basis of VBT, explain the geometry and magnetic behaviour of $[Co(NH)_6]^{3-}$ ion.

3.A solution of $[Ni(H_2O)_6]^{2+}$ is green but a solution of $[Ni(CN)_4]^{2-}$ is colourless. Why?

4.Explain on the basis of valence bond theory, the geometry and magnetic behaviour of $[CoF_6]^{3-}$ ion.

5.$[Cr(NH_3)_6]^{3+}$ is paramagnetic while $[Ni(CN)_4]^{2-}$ is diamagnetic. Explain why?

2024

1. On the basis of VBT , explain why is $[Cr(NH_3)_6]^{3+}$ paramagnetic while $[Ni(CN)_4]^{2-}$ diamagnetic?

2. On the basis of VBT explain that $[Ni(CN)_4]^{2-}$ ion with square planar structure is diamagnetic and the $[NiCl_4]^{2-}$ ion with tetrahedral geometry is paramagnetic .

UNIT 6(HALOALKANES AND HALOARENES)

QUESTION CARRY1 MARKS

2016

1.Explain about the Finkelstein Reaction.

2.Write about the Wurtz-Fittig Reaction.

3. Write Sandmeyer Reaction.

2017

1. Haloarenes are less reactive than Haloalkanes. Explain.

2. How will you convert methanal into ethanal?

3. What do you mean by cjirality of a compound?

4. Explain about the Swartz reaction.

5. Explain Finkelstein reaction.

6. Haloarenes are insoluble in water but soluble in benzene.Explain?

2018

1. Explain Wurtz reaction.

2. Explain De-carboxylation Reaction.

3. What is Gattermann Reaction.

2019

1. Which metal is used in fitting reaction?

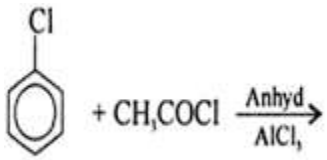
(a) Mg (b) Na (c) K (d) Fe

2. Write Wurtz-Fittig Reaction.

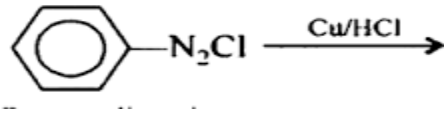
3. Define Saytzeff's Reaction.

4. State Anti-Markovnikov's rule.

5. Complete the reaction:



6. Complete the reaction:



2020

1.Ar-Cl +Na+ Cl-R $\xrightarrow{\text{dry ether}}$ Ar-R + 2NaCl. The reaction is:

(a) Wurtz reaction

(b) Fittig reaction

(c) Finkelstein reaction

(d) Wurtz fitting reaction

2. 2R-Cl + Na $\xrightarrow{\text{acetone}}$ R-R + 2NaCl . The reaction is :

(a) Wurtz reaction

(b) Fitting Reaction

(c)Finkelstein Reaction

(d)Frankland Reaction

3.Write IUPAC name of $K_3[Co(C_2O_4)_3]$

4.Write the following reactions only:

(a) Finkelstein reaction

(b) Friedel-crafts Alkylation reaction using chlorobenzene as a starting material.

5.Give the IUPAC name of the $CH_3CH(Cl)CH(Br)CH_3$.

6.Write Hoffmann Bromamide degradation reaction.

7.Write the reaction Sandmeyer reaction.

8.Write the reaction Friedel Crafts Alkylation reaction .

9.Give the IUPAC name of the compound $ClCH_2C \equiv CCH_2Br$

10.Write Cannizzaro's reaction.

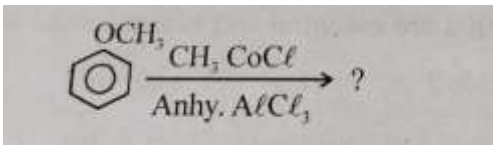
11.Write Etard's reaction.

2022

1.Write the IUPAC Name isopropyl chloride.

2.Write a short note on Wurtz-fitting reaction.

3. Complete the reaction:



4.The carbon attached to halogens in haloalkane is:

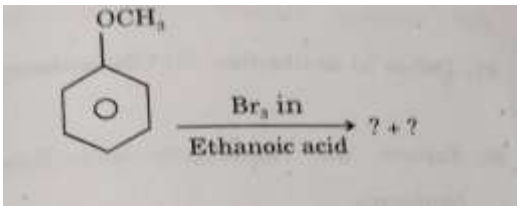
(a) sp^2 hybridized

(b) sp^3 hybridized

(c) sp hybridized

(d) None of these

5. Complete the reaction:



6.Define Markovnikov's Rule.

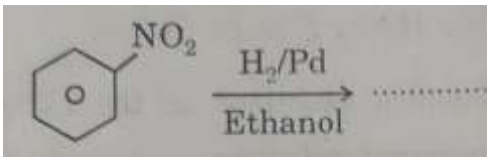
7. Which halogen compound undergo SN_1 reaction:

$C_6H_5CH_2$-Br or $C_6H_5CH(C_6H_5)Br$?

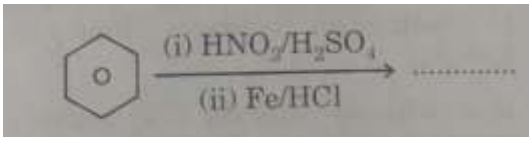
2023

1.Write IUPAC name of $CH_3—CH_2—N(CH_2CH_3)—CH_3$.

2. Complete the reaction:



3.Complete the reaction:



2024

1. What is Wurtz Reaction?

2. Write the IUPAC name of 

QUESTION CARRY2 MARKS

2016

1.Write DDT Structure. Give harmful effects of DDT.

2. What are ambident nucleophiles? Explain with an example.

2017

1. Draw the structure of DDT.

2018

1. Why Haloarenes are less reactive than Haloalkanes?

2. Explain : (a) Sandmeyer's reaction

(b) Williamson Synthesis

3. Explain why Haloalkanes give cyanide with KCN and isocyanide with AgCN ?.

2019

1. Write the chemical equation of :

(a) Coupling reaction

(b) Mendius Reaction

2020

1.Write Balz-Schiemann reaction.

2.Write Diazotisation reaction.

2022

1.Alkyl halides are extremely less reactive towards nucleophilic subsititution reactions. Why?

2.Although chlorine is an electron withdrawing group yrt it is ortho- , para- , directing in electrophilic aromatic substitution reactions. why?

3.Haloarenes are very slightly soluble in water. Why?

4.Why haloarenes are less reactive than haloalkanes towards the nucleophilic substitution reaction?

5.Describe Fitting Reaction by giviing example.

6.Why Aryl halides are otho-para directing towards electrophiles?

7.Describe Gabriel phthalimide synthesis.

2024

1. Why are haloarenes less reactive towards nucleophilic subsitution reactions?

UNIT 7 (ALCOHOL, PHENOL AND ETHERS)

QUESTION CARRY 1 MARKS

2016

1.Complete the following reaction:

$CH_3OH \xrightarrow{P,\ I_2} ? \xrightarrow{Mg,\ Ether} ? \xrightarrow{CH_3CHO\ ,\ H^+,\ H_2O} ?$

2. Write Diazotisation reaction.

2017

1.Which enzyme is used to convert glucose into ethyl alcohol?

2.Explain Reimer -Tiemann Reaction.

3. What happen when benzenediazonium chloride is heated with water?

4. Alcohols are weaker acids than water.Why?

5.Explain why phenols are more acidic than alcohols?

6.Explain Williamson synthesis?

2018

1. Dimethyl ether has less boiling point than ethyl alcohol. Why?

2. Convert Phenol into Salicylic Acid.

2019

1. Write Kolbe's reaction.

2.Convert ethyl alcohol into methyl alcohol.

2020

1.Which is simple ether among the following ethers:

(a) $C_2H_5OCH_3$ (b) CH_3OCH_3 (c) $C_6H_5OCH_3$ (d) None of these

2.Which of the following cannot be prepared by using Williamson's synthesis:

(a)Methoxybenzene

(b) Benzyl-p-nitrophenyl ether

(c) Methyl tert-butyl ether

(d) Di-tertiary butyl ether

3.What happen when phenol is treated with concentrated nitric acid? Give reaction.

2022

1.Convert chlorobenzene to phenol.

2.What happens when phenol is treated with dil. HNO_3 at low temperature (298K)

3.Complete the reaction;

$$CH_3CH_2OH \xrightarrow{Cu/573K} ?$$

4.How will you convert propan-1-ol into propan-2-ol.

5.Phenols are ..... acids than carboxylic acid.

6.Write chemical reaction for the preparation of phenol from chlorobenzene.

7.Give the test to distinguish between ethanol and ethanal.

8.The intermolecular H-Bonding in alcohols and phenols is due to.....group present in their molecules.

9.When an alcohol reacts with HCl in the presence of catalyst the turbidity appears within 5 minutes, it is a :

(a) 1^{o} Alcohol (b) 2^{o} Alcohol (c) 3^{o} Alcohol (d) none of these

2024

1.How will you convert butan-1-ol into butanoic acid? Give chemical reaction.

2. Complete the reaction:

$$R\text{-}OH + ? \longrightarrow R\text{-}Cl + SO_2 + HCl$$

3. Arrange the following compounds in order of their increasing boiling points:

(i) Pentan-1-ol (ii) Butan-1-ol (iii) Ethanol (iv) Methanol

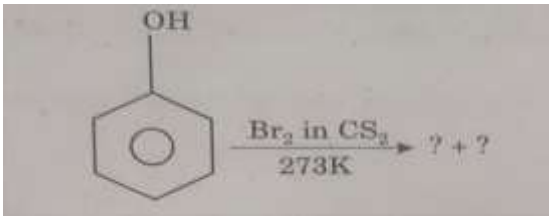
(a) (i), (ii), (iii), (iv)

(b) (ii), (iii), (iv), (i)

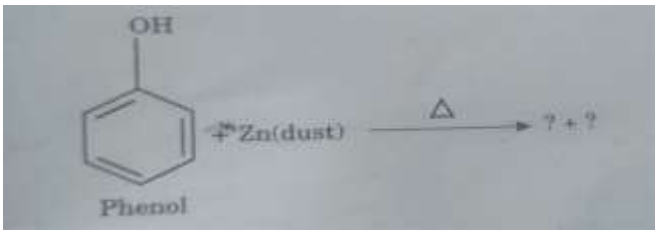
(c) (iv), (iii), (ii), (i)

(d) (iii), (iv), (i), (ii)

4. Complete the reaction:



5. Complete the reaction:



QUESTION CARRY2 MARKS

2016

1.Why Alcohols are higher boiling compounds than hydrocarbons of corresponding molecular masses but have lower boiling points than corresponding acids?

2.Alcohols are comparatively more soluble in water than hydrocarbons of comparable molecular masses. Explain.

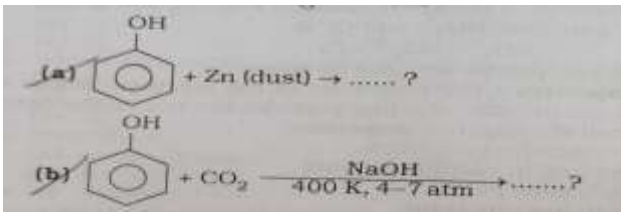
3.Draw the structure of isobutyl alcohol and give its IUPAC name.

2018

1. Phenol are more acidic than Alcohols. Explain.

2. Distinguish between primary, secondary and tertiary alcohols with Lucas Test?

3. Complete the reaction:



2019

1. What happens when secondary alcohols are heated over copper at 573K? Give reaction.

2020

1.Why alcohol is less acidic than phenol?

2.Explain why propanol has higher boiling point than that of hydrocarbon butane?

3.Give Lucas chemical test to distinguish between primary, secondary and tertiary alcohol.

4.Give chemical test to distinguish between ethanol and acetic acid.

2022

1.Alcohols are weaker acids than water . Why?

2.Phenol is more acidic than alcohols. Why?

3.Why phenols are acidic in nature ?

4.Compare the acidic strength of phenol and ethanol.

UNIT 8 (ALDEHYDES, KETONES AND CARBOXYLIC ACID)

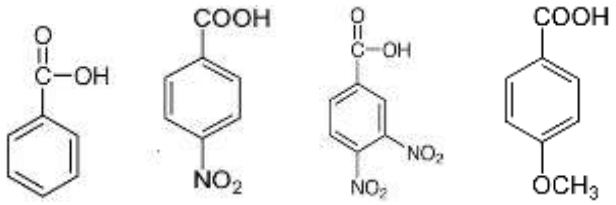
QUESTION CARRY 1 MARKS

2016

1. Explain about the Gattermann Reaction.

2.Do Aldehydes exhibit position isomerism?

3.Arrange the following in the order of increasing acid strength:



4. Write the IUPAC name of the following compound:

$CH_3CH_2CH=CHCHO$

5. How will you distinguish between CH_3CHO and CH_3COCH_3.

6. Complete the reaction:

$2HCHO + NaOH\ (50\%) \longrightarrow\ ?\ +\ ?\ .$

2017

1.How will you convert methanal to ethanal?

2. How will you convert benzaldehyde to benzophenone?

3. How will you convert ethanol into ethanoic acid ?

4. Write a short note on Stephen reduction.

5. Boiling point of carboxylic acid are higher than corresponding alcohols. Why?

6. How will you convert benzoic acid into benzaldehyde?

7. How will you convert acetaldehyde into acetone?

8. Explain Gattermann reaction?

2018

1. Explain Reimer-Tiemann Reaction

2. Explain Rosenmund Reaction

3. Explain Cannizzaro Reaction.

4. Convert Acetic Acid into Formic Acid.

5. What is Gattermann Reaction.

2019

1. IUPAC name of formic acid is :

(a) Methanoic Acid (b) Ethanoic Acid (c) Methanedioic Acid (d) Ethanedioic Acid

2. IUPAC name of acetic acid :

(a) Ethanoic acid (b) Methanoic acid (c) Butanoic acid (d) Propanoic acid

2020

1.CH_3CHO and $C_6H_5CH_2CHO$ can be distinguished chemically by:

(a) Benedict's test (b) Iodoform test (c) Tollen's reagent test (d) Fehling's solution test

2.Write the following reaction :

(a) Cross aldol condensation reaction

(b) Rosenmund's reaction

3.Covert acetaldehyde to acetone

4.Distinguish between acetaldehyde and acetone?

5.Convert Formaldehyde to acetaldehyde.

6.How will you distinguish between Benzaldehyde and Acetone?

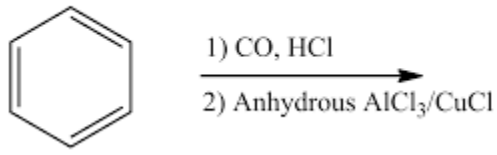
2022

1.Complete the reaction :

$CH_3COOH \xrightarrow{(i)LiAlH_4/ether\ (ii)\ H_2O}$?

2.Explain Rosenmund's reaction.

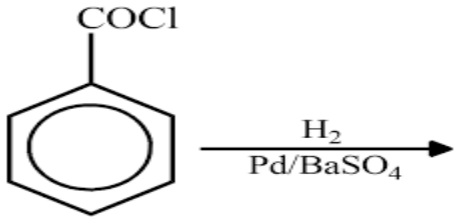
3. Complete the following reaction:



4. Complete the reaction:

$3CH_3COOH + PCl_3 \longrightarrow$?

5. Complete the reaction:



2023

1. Aldehydes are generally more reactive than ketones in nucleophilic addition reactions due to…….. and …… reasons.

2024

1. What will be the product of following reaction:

$$R\text{-}COONa \xrightarrow{NaOH + CaO,\ \Delta} ? + Na_2CO_3$$

(a) $R\text{-}CH_2OH$ (b) R-CHO (c) $R\text{-}CH_3$ (d) R-H

2. Arrange the following compounds in increasing order of their strength:

(i) 2,4,6-trinitrophenol

(ii) 3-nitrophenol

(iii) 3,5-dinitrophenol

(iv) 4-Methylphenol

(a) (i), (ii), (iii), (iv)

(b) (iv), (ii),(iii),,(i)

(c) (iii), (iv), (ii), (i)

(d) (ii), (i), (iii), (iv)

QUESTION CARRY2 MARKS

2016

1. Write a Short note on:

(a) Hell-Volhard - Zelinsky Reaction

(b) Clemmensen - Reduction

2. (a)Complete the following reaction :

$CH_3COOH \xrightarrow{SOCl_2} ? \xrightarrow[Pd/BaSO4]{H2} ?$

(b) Arrange the following in increasing order of Acidic Strength:

CH_3CH_2COOH , $OHCH_2COOH$, $C_6H_5CH_2COOH$, $ClCH_2COOH$

3.Write the following reactions:

(a) Aldol Condensation Reaction

(b) Cross Cannizzaro's Reaction

4. (a) Why the bond length of C=O in carboxylic acid is slightly larger than that in aldehyde and ketone?

(b) Complete the following reaction:

$C_6H_5Br + Mg \xrightarrow{ether} ? \xrightarrow{CO_2\ ,\ H_3O^+} ?$

5.Write reaction on:

(a) Rosenmund's Reaction

(b) Decarboxylation Reaction

2017

1.Write a short note on :

(a) Reimer-Tiemann reaqction.

(b) Cannizzaro reaction.

2. Write a short note on:

(a) Gattermann-koch reaction.

(b) Wolff-Kishner reduction.

3. (a) How will you convert acetic acid into aldehyde?

(b) How will you convert propanal into propanoic acid?

4. Writ a short note : (a) Aldol condensation (b) Hundsdiecker reaction

5. Which is more reactive - aldehyde or ketone, in nucleophilic addition reaction and why?

2018

1. Explain : Aldol Condensation and Coupling Reaction.

2. Explain: (a) Clemmensen's Reduction (b) Nitration of Benzaldehyde

3. Explain: (a) Hofmann Bromamide reaction (b) HVZ Reaction

4. (a) Give the reaction of CH_3CHO with NH_2OH .

(b) Explain the Wolf-Kishner Reduction.

2019

1. Give simple chemical test to distinguish between Pentan-2-one and Pentan-3-one.

2020

1.Why Carboxylic acids are stronger acids than alcohols and phenols?

UNIT 9 (AMINES)

QUESTION CARRY1 MARKS

2016

1.Write the Coupling Reaction.

2. Give a chemical test to distinguish between aniline and N-methyl aniline.

3.How will you convert benzoic acid to aniline.

4.Which of the following is more basic:

(a) $C_6H_5NH_2$ (b) NH_3 (c) $CH_3CH_2NH_2$ (d) CH_3NH_2

5.How will you convert aniline to benzene diazonium chloride?

6.How will you convert methylamine to ethylamine?

7.Complete the following reaction:

$CH_3OH \xrightarrow{P, I_2} ? \xrightarrow{KCN} ? \xrightarrow{4H\backslash\ Acl.\ Na} ?$

8. Aromatic primary amines cannot be prepared by Gabriel phthalimide synthsis.

9. Benzene Diazonium chloride on treatment with warm water gives:

(a) Diphenyl ether (b) Chlorobenzene (c) phenol (d) p-Hydroxyazobenzene

2017

1. Aniline is less basic than ethylamine. Why?

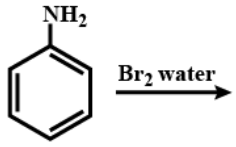
2. Write a note Carbylamine reaction?

3.Explain Diazotisation reaction ?

4. Explain Gabriel phthalimide synthesis.

5. Write a note on Carbylamine reaction.

6. Complete the following reaction:



7. Dimethyl amine is more basic than methyl amine .Why?

2018

1. What is Carbyl amine Reaction?

2. Explain ethylamine is more basic than Ammonia.

3. Convert ethylamine to methylamine.

4. Why Aniline is less basic than ethylamine ?

5. Why Primary amines have higher boiling point than Tertiary amines.

6. Why are alkyl amine are stronger base than aryl amines.

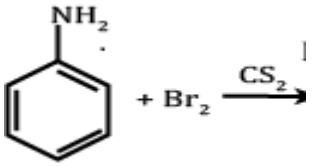
7. What is Diazotization Reaction?

8. $C_6H_5NH_2 + CHCl_3 + KOH \longrightarrow$ .....?

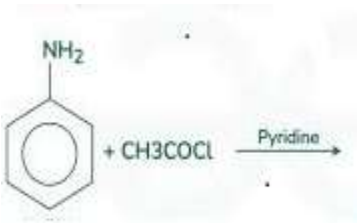
9. $RCONH_2 + Br_2 + 4KOH \longrightarrow$ .....?

10. Convert Aniline into Benzoic Acid.

11. Complete the reaction:



12. Complete the reaction:



2020

1.Choose the incorrect statements:

(a) Primary amines show internuclear hydrogen bonds

(b) Tert-butylamine is a primary amine

(c) Tertiary amine do not shows hydrogen bonds

(d) Isopropyl amine is a secondary amine

2.Which is the incorrect statement in the following:

(a) Methyl amine is more basic than ammonia

(b) Amines form hydrogen bonds

(c) Ethyl amine has higher boiling point than propane

(d) Dimethylamine is less basic than methylamine

3.What is zwitter ion?

4.Write Carbylamine reaction.

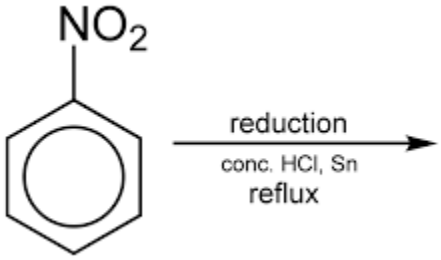
5.Write Ammonolysis reaction.

2022

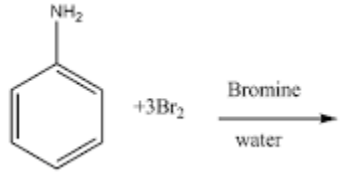
1.The amine $(C_2H_5)_2NH$ is a :

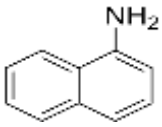
(a) 1^o Amine (b) 2^oAmine (c) 3^o Amine (d) None of these

2. Complete the reaction:



3. Complete the reaction:



4. The Amine  is:

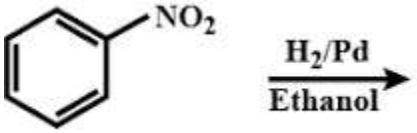
(a) Primary Amine

(b) Secondary Amine

(c) Tertiary Amine

(d) None of these

5. Complete the reaction:



2023

1.Aliphatic amines are ……. Basic than ammonia.

2.Formalin is 40% aqueous solution of……

3.How will you convert Methanamine into Ethanamine?

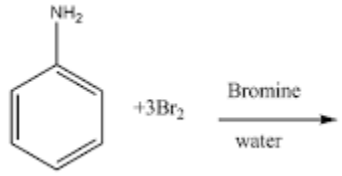
4.Give an example of primary amine and write its IUPAC name.

5.Give an example of tertiary amine and write its IUPAC name.

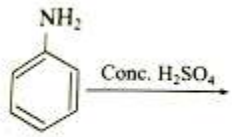
6.How will you convert ethanoic acid into methanamine?

7.Aromatic amines are …….. basic than ammonia.'

8.Complete the reaction:



9. Complete the reaction:



10. Complete the reaction :

$C_6H_5NH_2 + CHCl_3 + alc.KOH \xrightarrow{\Delta}$?

2024

1.What is carbyl amine reaction?

2.Why ethyl amine is more basic than ammonia?

QUESTION CARRY2 MARKS

2016

1. Account for the correct order of decreasing basicity of ethylamine ,2-aminoethanol, 3-amino-1-propanol.

2.(a) How will you convert aniline to chlorobenzene.

(b) Write a short note on Carbylamine Test.

3.(a) Tertiary amines do not undergo acylation. Explain.

(b) Write a short note on Hoffmann's degradation reaction.

4. Give one chemical test to distinguish between the following pair of compounds : Mrthylamine and Dimethylamine.

5.(a) How will you convert benzene to aniline?

(b) Write a short note on Gabriel Phthalimide Reaction.

6. (a) Write a short note non ammonolysis reaction.

(b) Aniline does not undergo Friedal Craft Alkylation. Explain.

7. (a) Arrange the following compounds in order of their basis strength in aquous solution:

NH_3, $C_6H_5NH_2$, CH_3NH_2,$(CH_3)_3N$.

(b) Complete the following reaction:

$CH_3OH \xrightarrow{PBr_3} A \xrightarrow{KCN\ (alc)} B \xrightarrow{LiAlH_4} C.$

2017

1. Explain Diazotisation reaction.

2. Methylamine is stronger base than ammonia.Why?

3. Benzylamine is stronger base than aniline.Why?

2018

1.Explain the basicity of Primary, Secondary and Tertiary amines.

2019

1.Out of ethylamine and aniline which one is more basic and Why?

2.Why amines have higher boiling point than corresponding hydrocarbons?

2022

1.Write a test to distinguish between primary, secondary and tertiary amines.

2023

2.Why do primary amines have higher boiling point than tertiary amines?

3.Ethylamine is more basic than ammonia. Why?

UNIT 10 (BIOMOLECULES)

QUESTION CARRY 1 MARKS

2016

1.Name the vitamin whose deficiency causes Beri-Beri.

2017

1. Name the Vitamin , the deficiency of which causes the diseases beri-beri.

2. Define the denaturation of protein.

3. What is Peptide Linkage? Give one Example.

4. Write the chemical name of vitamin C and name the disease caused by the deficiency of Vitamin C.

5. Which enzyme convert maltose into glucose?

2018

1. Give Chemical name of Vitamin-A.

2. What is denaturation of Proteins?

2019

1. Which of the following is not present in the DNA:

(a) Adenine (b) Uracil (c) Cytosine (d) Guanine

2. Chlorophyll contains :

(a) Co (b) Fe (c) Mg (d) Zn

3. Give chemical name of Vitamin D.

4. Define Denaturation of protein?

5. Which of the following is not present in RNA?

(a) Thymine (b) Uracil (c) Cytosine (d) Guanine

6. Give Chemical name of Vitamin-A.

2020

1.Fructose is an example of:

(a) Monosaccharides

(b) Disaccharides

(c) Polysaccharides

(d) None of these

2.What are essential amino acids?

3.The chemical name of vitamin $B_6$is .....

2021

1. Deficiency of Vitamin C causes:

(a) Scurvy (b) Beri-Beri (c) Convulsions (d) Muscular Weakness

2022

1. The chemical name of vitamin $B_1$is .....

2. Which of the following is not present in DNA ?

(a) Adenine (b) Uracil (c) Cytosine (d) Guanine

3.The secondary structure of protein is stabilized by .....

4.Name the vitamin responsible for the coagulation of blood.

5.The chemical name of vitamin $B_2$is .....

6.Which of the following is not present in RNA ?

(a) Thamine (b) Uracil (c) Cytosine (d) Guanine

7.The enzyme that catalyses hydrolysis of maltose into glucose is .....

8.What are monosaccharides?

9.Fructose is an example of:

(a)Monosaccharides

(b)Disaccharides

(c)Polysaccharides

(d)None of these

10.The chemical name of vitamin $B_6$is .....

11.Starch is the example of :

(a) Monosaccharides

(b) Disaccharides

(c) Polysaccharides

(d) None of these

2024

1. Which of the following bases is not present in DNA?

(a) Adenine (b) Uracil (c) Cytosine (d) Guanine

2. The sugar present in RNA is:

(a) β-D-2-deoxyribose

(b) β-D-2(+)-Glucose

(c) β-D-ribose

(d)α-D-(+) Glucose

QUESTION CARRY 2 MARKS

2016

1.List the Structural and Functional Difference between RNA and DNA.

2.What are carbohydrates? Give the important functions of carbohydrates.

3.What is the difference between α-glucose and β-glucose? Write their cyclic structures.

2017

1. Write the Chemical Name of Vitamin C and Name the diseases caused by the deficiency of Vitamin C.

2. Differentiate between DNA and RNA.

2018

1.Explain Primary and Secondary Structure of Proteins.

2.What are essential and non-essential Amino acids?

3. Differentiate between RNA and DNA.

2019

1.What are essential amino acids?

2020

1.Give one example of water soluble and fat soluble vitamins.

2.Why are Vitamin-A and Vitamin-C essential to us? Gives their important sources.

2022

1.What are essential and non- essential amino acids?

2.Differentiate between DNA and RNA.

3.Differentiate between fibrous protein and globular proteins.

2024

1. Write the important structural and functional differences between DNA and RNA.