

**CHEMISTRY PUBLIC EXAM QUESTIONS COLLECTION****UNIT-1**

1. Explain Zone refining process. (Mar/2020 & Apr2023)
2. What is the role of limestone in the extraction of iron from its oxide  $\text{Fe}_2\text{O}_3$ ? (Jun/2020)
3. Which types of ores can be concentrated by froth floatation method ? Give two examples. (Jun/2020 & Apr 2023)
4. Explain the following terms with suitable example. a) Gangue b) Slag (Sept/2020)
5. What are the differences between Minerals and Ores ? (Sept/2020),(May/2022)&(Mar/2024)
6. Explain Froth Floatation process . (Aug/2021)
7. Write a note on gravity separation method. (May/2022)
8. Explain the Mond's process of refining Nickel. (May/2022)&(June/2023)
9. Explain Acid leaching with an example. (Sept/2022)
10. Explain the principle of electrolytic refining with an example. (Sept/2022)
11. What are the limitations of Ellingham diagram? (June/2023)
12. Write about the liquation process (June/2023)
13. What is Calcination (Mar/2024)
14. What is the role of Silica in the extraction of Copper? (Mar/2024)
15. What are the various steps involved in extraction of pure metals from their ores? (June/2024)
16. Explain the electro metallurgy of Aluminium (June/2024)

**UNIT-2**

1. There is only a marginal difference in decrease in ionization enthalpy from Aluminium to Thallium – Explain Why? (Mar/2020)
2. What is catenation ? Write the conditions for catenation property. (Mar/2020) & (Sept/2022)
3. A hydride of 2<sup>nd</sup> period alkali metal (A) on reaction with compound of Boron (B) in the presence of ether to give a reducing agent (C) Identify A, B and C. (Jun/2020)
4. How is Potash alum prepared ? (Jun/2020)
5. What are the factors responsible for the anomalous behavior of first element of the p-block ? (Sept/2020), (Aug/2021)&(June/2024)
6. What is Catenation ? (Sept/2020)
7. Give the uses of Borax (Aug/2021) & (June/2024)
8. What are the uses of Boric acid ? (May/2022),(Sept/2022)& (Mar/2024)
9. Write the uses of Silicones. (Apr2023)
10. Write a note on Fischer tropesch synthesis (Apr2023)
11. Describe the structure of diborane(Apr2023)
12. Write Ethyl borate test. (Apr/2023)
13. Give one example for the following a) icosagen b) chalcogen (June/2023)
14. Write a note on Hydroboration (June/2023) & (June/2024)
15. What are Silicates? (Mar/2024)
16. How will you convert Boric acid to Boron nitride? (Mar/2024)

**UNIT-3**

1. How is bleaching powder prepared? (Mar/2020) & (May/2022)
2. Why HF cannot be stored in glass bottles? (Mar/2020)
3. Write the molecular formula and draw the structure of sulphurous acid and Marshall's acid. (Mar/2020)
4. What type of hybridization is found in the following ? (a)  $\text{BrF}$  (b)  $\text{BrF}_5$  (c)  $\text{BrF}_3$  (Jun/2020)
5. Explain Deacon's process for manufacture of Chlorine. (Jun/2020)

6. Sulphuric Acid is a dibasic acid. Prove it. (Jun/2020)
7. Give the uses of Helium (Sept/2020)& (June/2023)
8. Write the balanced equation for the overall of Chlorine with cold NaOH and hot NaOH. (Sept/2020)
9. Write a short note on Holmes signal. (Sept/2020)
10. What are Inter halogen compounds ? Give examples. (Aug/2021) , (May/2022) & (June/2024)
11. Explain the bleaching action of Sulphur dioxide(SO<sub>2</sub>) . (Aug/2021)& (June/2023)
12. Write any two uses of Helium . (Aug/2021)
13. What is inert pair effect ? (May/2022)
14. What are the uses of Oxygen ? (May/2022)
15. Give the uses of Argon. (Sept/2022)
16. Write the property of Inter halogen compounds. (Sept/2022)
17. Find the oxidation state of Halogen in the following compounds.i) OF<sub>2</sub> ii) I<sub>2</sub>O<sub>4</sub>(Apr/2023)
18. Complete the following reaction
  - 1, P<sub>4</sub> + NaOH + H<sub>2</sub>O →
  - 2, XeF<sub>6</sub> + H<sub>2</sub>O →
  - 3, Cu + Conc H<sub>2</sub>SO<sub>4</sub> → (Apr/2023)
19. Sulphuric acid is a dehydrating agent. Give example(June/2023) & (Mar/2024)
20. Give the uses of Helium. (Mar/2024)
21. Give the uses of Sulphuric acid. (June/2024)
22. Write the molecular formula and structural formula for the following
  - a) Phosphoric acid b) Nitric acid (June/2024)

#### UNIT-4

1. Classify the following elements into d-block and f-block elements:
  - i) Tungsten
  - ii) Ruthenium
  - iii) Promethium
  - iv) Einstinium (Mar/2020)
2. Write the Chromyl Chloride Test. (Mar/2020)
3. What is Lanthanide or Lanthanoid contraction ? Explain its consequences. (Jun/2020),(June/2023)& (Mar/2024)
4. What are Interstitial compounds ? Give an example (Sept/2020),(Aug/2021), (June/2023) &(June/2024)
5. Which metal in the 3d series exhibits +1 oxidation state most frequently and why ? (Sept/2020)
6. Why 'd' block elements exhibit variable oxidation state ? (Aug/2021)
7. Calculate the number of unpaired electrons in Ti<sup>3+</sup>, Mn<sup>2+</sup> and calculate the spin only magnetic moment . (Aug/2021)
8. Which is more stable Fe<sup>3+</sup> or Fe<sup>2+</sup> ? Why ? (May/2022)& (Mar/2024)
9. What are the properties of Interstitial compounds ? (May/2022)
10. Write a note on Zeigler – Natta catalyst. Give its uses. (Sept/2022)
11. Compare Lanthanides and Actinides. (Sept/2022 &Apr2023)
12. Out of Lu(OH)<sub>3</sub> and La(OH)<sub>3</sub> which is more basic and why? (June/2024)

#### UNIT-5

1. Write any two hydrate isomers of the complex with the molecular formula CrCl<sub>3</sub>.6H<sub>2</sub>O. (Mar/2020)
2. [Sc(H<sub>2</sub>O)<sub>6</sub>]<sup>3+</sup> is colourless – Explain (Mar/2020)
3. Write the IUPAC name of the following : (Mar/2020)
  - A) [Ag(NH<sub>3</sub>)<sub>2</sub>]<sup>+</sup>
  - B) [Co(NH<sub>3</sub>)<sub>5</sub>Cl]<sup>2+</sup>
4. Calculate the magnetic moment and magnetic property of [CoF<sub>6</sub>]<sup>3-</sup>(Mar/2020)

5. Give the difference between double salts and co-ordination compounds. **(Jun/2020)& (Mar/2024)**
6. In an octahedral crystal, draw the figure to show splitting of d-orbitals. **(Jun/2020)**
7. Indicate the possible type of Isomerism for the following complexes  
(A)  $[\text{Co}(\text{en})_3]^{3+}$  (B)  $[\text{Pt}(\text{NH}_3)_2\text{Cl}_2]^{2+}$  **(Jun/2020)**
8. Mention the metal complexes and its metal ions are used in biological system. **(Sept/2020)**
9. Write the postulates of Werner's Theory. **(Sept/2020) & (May/2022)**
10. Give the difference between double salts and coordination compounds. **(Aug/2021)**
11. What are the limitations of VB theory ? **(Aug/2021) & (Sept/2022)**
12. Based on the VB theory, explain why  $[\text{Ni}(\text{CN})_4]^{2-}$  is diamagnetic. **(Aug/2021)**
13. Define Coordination number. **(May/2022)**
14. Write the following for the complex  $[\text{Ag}(\text{NH}_3)_2]^+$  (a) Ligand (b) Central metal ion (c) IUPAC name **(May/2022)**
15. Write the IUPAC ligand name for the following a)  $\text{C}_2\text{O}_4^{2-}$  b)  $\text{H}_2\text{O}$  c)  $\text{Cl}^-$  **(Sept/2022)**
16. Define the term central Atom in co-ordination compound. **(Apr/2023)**
17. For the complex,  $[\text{Pt}(\text{NO}_2)(\text{H}_2\text{O})(\text{NH}_3)_2]\text{Br}$  identify the following
18. a) Central metal atom/ion b) Co-ordination number c) Oxidation number of central metal ion
19. Describe the nature of bonding in metallic carbonyls. **(Apr/2023)**
20. Mention the oxidation state of the central metal ion, co-ordination number, nature of ligand for the complex  $\text{K}_4[\text{Mn}(\text{CN})_6]$  **(June/2023)**
21. Draw all possible geometrical isomers of the complex  $[\text{Co}(\text{en})_2\text{Cl}_2]^+$  and identify the optically active isomer. **(June/2023)**
22. Give an example of Coordination Compounds used in Medicine and a Biologically important Coordination Compound. **(Mar/2024)**
23. What is linkage isomerism ? Explain with an example **(June/2024)**
24. In an octahedral crystal field, draw the figure to show splitting of d-orbitals **(June/2024)**

### UNIT-6

1. If the no,of close packed sphere is 6, calculate the number of Octahedral voids and Tetrahedral voids generated. **(Mar/2020)**
2. Write a note on Frenkel defect **(Mar/2020 & Apr2023)**
3. Differentiate between crystalline solids and amorphous solids. **(Jun/2020,(May/2022)&(June/2023)**
4. If the radius of the compound between 0.155 – 0.255, find out the Co-ordination number and structure of the compound. **(Jun/2020)**
5. Difference between Isotropy and Anisotropy in solids. **(Sept/2020)**
6. Explain Schottky defect. **(Sept/2020 & Apr2023)**
7. Define Unit cell . **(Aug/2021),(Sept/2022)&(June/2024)**
8. What is meant by term "Coordination Number" ? What is the Coordination number of atoms in a bcc structure ? **(Aug/2021)**
9. Classify the following into covalent, molecular, ionic and metallic solids. **(Aug/2021)**  
(i) Diamond (ii) Brass (iii) NaCl (iv) naphthalene (v) Glucose (vi)  $\text{SiO}_2$
10. Define Covalent solids. **(May/2022)**
11. What is packing efficiency ? **(Sept/2022)**
12. Write a note on Frenkel defect. **(Sept/2022)**
13. Calculate the number of atoms in FCC unit cell. **(Apr/2023)**
14. Calculate the percentage efficiency of packing in case of Simple cubic crystal. **(Mar/2024)**
15. Aluminium crystallizes in a cubic close packed structure. Its metallic radius is 125pm. calculate the edge length of unit cell. **(Mar/2024)**

16. Calculate the percentage efficiency of packing in case of body centered cubic crystal. (June/2024)

### UNIT-7

1. Derive integrated rate law for a first order reaction  $A \longrightarrow \text{Product}$  (Mar/2020) & (Mar/2024)
2. The rate constant for a first order reaction is  $1.54 \times 10^{-3} \text{ s}^{-1}$ . Calculate its half life time. (June/2020) & (June/2024)
3. The rate of the reaction  $x + 2y \longrightarrow \text{product}$  is  $4 \times 10^{-3} \text{ mol L}^{-1} \text{ s}^{-1}$ , if  $[x] = [y] = 0.2\text{M}$  and rate constant at 400K is  $2 \times 10^{-2} \text{ s}^{-1}$ , what is the overall order of the reaction. (Sept/2020)
4. Explain the effect of catalyst on reaction rate with an example. (Sept/2020)
5. Write two differences between rate and rate constant of a reaction. (Aug/2021) & (June/2023)
6. Derive integrated rate law for a zero order reaction  $A \longrightarrow \text{product}$ . (Aug/2021)
7. Give examples for the first order reaction. (May/2022)
8. Write Arrhenius equation and explain the terms involved. (May/2022) & (Mar/2024)
9. Define order and molecularity of a reaction. (Sept/2022)
10. Derive Integrated Rate Law for a Zero order reaction.  $A \longrightarrow \text{Product}$  (Sept/2022) & (June/2023)
11. Show that in case of first order reaction the time required for the completion of 99% is twice the time required for the completion of 90% of the reaction. (Apr/2023)
12. Give two examples for Zero order reaction (Apr/2023)
13. Define half life of a reaction (June/2023)
14. What is an Order of a reaction? (Mar/2024)
15. Define Rate constant (June/2024)

### UNIT-8

1. What are Lewis acid and bases ? Give an example for each. (Mar/2020) & (June/2024)
2. Derive Henderson equation. (Mar/2020)
3. Write the pH value of the following substances: (Mar/2020)
 

A) Vinegar	B) Black coffee	C) Baking soda	D) Soapy water.
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4. Define – Buffer action (Jun/2020)
5. Define –Common ion effect (Jun/2020)
6. Derive an expression for Ostwald's dilution law. (Jun/2020 & Apr/2023)
7. Calculate the pH of 0.1M  $\text{CH}_3\text{COONa}$  solution (pKa for  $\text{CH}_3\text{COOH}$  is 4.74). (Sept/2020)
8. Define ionic product of water. give its value at room temperature. (Sept/2020)
9. Classify the following into Lewis acids and Lewis bases. (Sept/2020)
 

(A) $\text{BF}_3$	(B) $\text{CO}_2$	(C) $\text{MgO}$	(D) $\text{CH}_3^-$
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10. State Ostwald's dilution law . (Aug/2021)
11. Find the pH of a buffer solution containing 0.20 mole per litre sodium acetate and 0.18 mole per litre acetic acid.  $K_a$  for acetic acid is  $1.8 \times 10^{-5}$ . (Aug/2021)
12. What are the limitations of Arrhenius concept? (May/2022)
13. Define pH (May/2022) & (June/2024)
14. Explain common ion effect with example. (May/2022) & (Mar/2024)
15. What are Lewis acids and bases ? Give an example for each. (Sept/2022)
16. What is Buffer Solution ? Give an example ? (Sept/2022)
17. What is conjugate Acid-Base pairs? (Apr/2023)
18. Calculate the concentration of  $\text{OH}^-$  ion in a fruit juice which contains  $2 \times 10^{-3} \text{ M}$ ,  $\text{H}_3\text{O}^+$  ion. Identify the nature of the solution. (June/2023)
19. Define Buffer Index. (Mar/2024)



**UNIT-9**

- How are metals protected from corrosion by cathodic production method? (Mar/2020)
- A conductivity cell has two platinum electrodes separated by a distance of 1.5 cm and the cross sectional area of each electrode is 4.5 sq.cm. Using this cell the resistance of 0.5N electrolyte solution was measured as 15 ohms. Find the specific conductance of the solution. (Mar/2020)
- State Kohlrausch's law and explain any one of the application. (Jun/2020)
- A solution of Silver nitrate is electrolysed for 30 minutes with a current of 2 amperes. Calculate the mass of silver deposited at the cathode. (Sept/2020)
- Derive a expression for Nernst equation. (Sept/2020) , (May/2022) , (Sept/2022) & (June/2024)
- Define Equivalent conductance (Aug/2021)
- What are the factors that affects electrolytic conductance ? (Aug/2021) & (May/2022)
- State Faraday's laws of electrolysis. (Aug/2021 & Apr/2023)
- A solution of silver nitrate is electrolysed for 20 minutes with a current of 2 amperes. Calculate the mass of silver deposited at the cathode. (Sept/2022)
- Reduction potential of two metals  $M_1$  and  $M_2$  are  $E_{M_1^{2+}/M_1}^0 = -2.3V$  and  $E_{M_2^{2+}/M_2}^0 = 0.2V$  . predict which one is better for coating the surface of iron. Given:  $E_{Fe^{2+}/Fe}^0 = -0.44V$  (June/2023)
- Explain about Galvanic cell notation. (Mar/2024)
- Can  $Fe^{3+}$  oxidises bromide to bromine under standard conditions?  
Given:  $E_{Fe^{3+}/Fe^{2+}} = 0.771V$   $E_{Br_2/Br^-} = 1.09V$ . (Mar/2024)

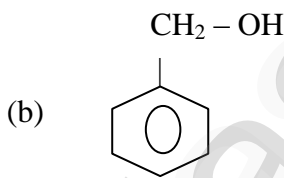
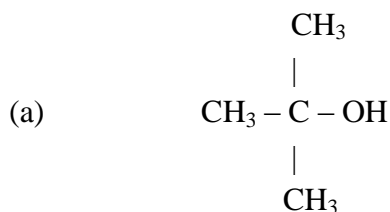
**UNIT-10**

- Write the dispersed phase and dispersion medium of butter. (Mar/2020)
- Mention the shapes of the following colloidal particles.  
i)  $As_2S_3$     ii) Blue gold sol    iii) Tungstic acid sol (Mar/2020)
- Differentiate physisorption and chemisorption. (Mar/2020) & (June/2024)
- Write a note on Tyndall Effect (Jun/2020)
- Powdered  $CaCO_3$  reacts much faster with dilute HCl than with the same mass of  $CaCO_3$  as marble. Give reason. (Jun/2020)
- What are the characteristics of catalyst ? (Jun/2020) & (May/2022)
- What is inversion of phase ? Give an example. (Sept/2020)
- Identify the auto catalyst in the following reaction. (Sept/2020)  
(A)  $CH_3COOC_2H_5 + H_2O \longrightarrow CH_3COOH + C_2H_5OH$   
(B)  $2AsH_3 \longrightarrow 2As + 3H_2$
- Name the factors affecting adsorption. (Sept/2020)
- What is meant by Electro Osmosis ? (Aug/2021)
- Discribe adsorption theory of catalysis. (Aug/2021) & (Sept/2022)
- Write a note on Electrophoresis. (May/2022)
- What is homogeneous catalysis ? Give example. (May/2022)
- What is Heterogeneous Catalysis ? Give an example. (Sept/2022)
- What are catalytic poisons? (Apr/2023) )&(June/2024)
- Write a note on Helmholtz electrical double layer. (Apr/2023)
- How colloids are used in tanning of leather and in Rubber industry? (Apr/2023)
- Give two important characteristics of physisorption (June/2023)
- Why are lyophilic colloidal sols are more stable than lyophobic colloidal sols? (June/2023)
- Explain intermediate compound formation theory of catalysis with an example (June/2023)
- Explain the effect of temperature and pressure on Physisorption and Chemisorption. (Mar/2024)
- Define Gold number (Mar/2024)

23. Write a note on catalytic poison (June/2024)  
 24. Explain one method for coagulation (June/2024)

### UNIT-11

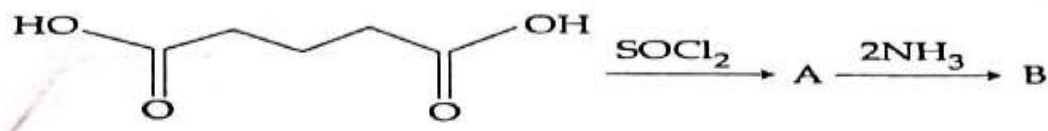
1. Why is C – O – C bond angle in ether slightly greater than the tetrahedral bond angle? (Mar/2020)
2. Give the coupling reaction of phenol (Mar/2020)
3. How will you prepare the following by using Grignard reagent?  
 A) Propan-1-ol                      B) Propan-2-ol (Mar/2020)
4. Mention the mechanism in the following reactions: (Jun/2020)
  - (a) One mole of HI reacts with methoxy ethane
  - (b) one mole of HI reacts with 2-methoxy-2-methylpropane
5. How to distinguish 1<sup>o</sup>, 2<sup>o</sup> and 3<sup>o</sup> alcohols by Victor Meyer's test. (Jun/2020)
6. Convert glycerol to acrolein. (Sept/2020) & (Aug/2021)
7. Explain auto oxidation of ethers. (Sept/2020)
8. What is Baeyer's reagent? How is it useful to convert ethane to ethane-1,2-diol? (Sept/2020)
9. How are the following conversions effected? Ethylene glycol → Acetaldehyde (Aug/2021)
10. Differentiate Primary, Secondary and Tertiary alcohols using Lucas test. (Aug/2021), (June/2023) & (Mar/2024)
11. Give the uses of Diethyl ether. (Aug/2021)
12. Give the IUPAC names: (May/2022)



13. Write any one method of preparation for diethyl ether. (May/2022)
14. Write the uses of Glycerol (Sept/2022)
15. Write the Bromination reaction of anisole. (Sept/2022)
16. Compound (A) of molecular formula C<sub>6</sub>H<sub>6</sub>O gives purple colouration with neutral FeCl<sub>3</sub>. Compound (A) reacts with ammonia to give Compound (B) and it also reacts with Zn dust to give Compound (C). Identify the compounds A, B and C and write down the equations. (Apr/2023)
17. Ethylene glycol  $\xrightarrow{\text{con H}_2\text{SO}_4}$  X. Identify 'X' (June/2023)
18. Write Kolbe's reaction. (Mar/2024)
19. How is Phenol prepared from the following i) chlorobenzene ii) Isopropylbenzene (June/2024)

### UNIT-12

1. Name the catalyst used in Rosenmund reduction and state its importance. (Mar/2020) & (Sept/2022)
2. Formic acid reduces Tollens reagent whereas acetic acid does not reduce. Give reason. (Mar/2020)
3. What is formalin? What is its use? (Mar/2020 & Apr/2023)
4. What is Urotropin / How is it prepared? (Jun/2020)
5. Write the test for Carboxylic Acid group. (Jun/2020), (Aug/2021) & (Sept/2022)
6. Arrange the following in the increasing order of relative reactivity of acid derivatives and mention the reason alone, CH<sub>3</sub>COOC<sub>2</sub>H<sub>5</sub>, CH<sub>3</sub>COCl, CH<sub>3</sub>CONH<sub>2</sub>, CH<sub>3</sub>COOCOCH<sub>3</sub> (Jun/2020)
7. Identify A and B (by bond line structure) (Jun/2020)



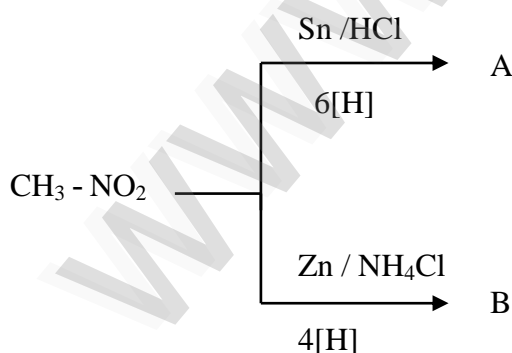
8. Explain Benedict's solution test. (Sept/2020)
9. Write the mechanism of Aldol condensation reaction. (Sept/2020)
10. How will you convert benzaldehyde into the following compounds ?  
i) Benzoin ii) Cinnamic acid iii) Malachite green (Aug/2021 & (Apr/2023))
11. Write Haloform reaction. (May/2022)
12. Explain the reducing action of formic acid with example. (May/2022)
13. Write a note on Benzoin condensation. (Sept/2022)
14. How will you convert acetone into propane? (Apr/2023)
15. How will you convert Ethyl acetate into Ethyl aceto acetate? (Apr/2023)
16. What happens when Isobutylene is subjected to reductive ozonolysis? (June/2023)
17. Explain Knoevenagel reaction. (Mar/2024)
18. How acetic acid is prepared Grignard reagent? (Mar/2024)
19. How is benzoic acid prepared from Toluene? (June/2024)
20. Identify A & B ; Benzoic acid  $\xrightarrow{\text{PCl}_5}$  A  $\xrightarrow{\text{Benzene \& anhydrous AlCl}_3}$  B (June/2024)

### UNIT-13

1. How is chloropicrin prepared? (Mar/2020)
2. What is Gomberg reaction? Explain (Mar/2020)
3. Identify A and B (Mar/2020)  

$$\text{A} \xrightarrow{\text{Na (Hg) / C}_2\text{H}_5\text{OH } 4[\text{H}]} \text{CH}_3 - \text{CH}_2 - \text{NH}_2$$

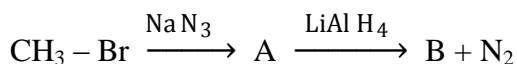
$$\text{B} \xrightarrow{\text{Na (Hg) / C}_2\text{H}_5\text{OH } 4[\text{H}]} \text{CH}_3 - \text{NH} - \text{CH}_3$$
4. Aniline does not undergo Friedel – Crafts reaction. Give reason. (Jun/2020 & Apr/2023)
5. Give short note on Gabriel Phthalimide synthesis (Jun/2020) & (May/2022)
6. How is aryl halide prepared using  $\text{Cu}_2\text{Cl}_2 / \text{HCl}$  (or)  $\text{Cu}_2\text{Br}_2 / \text{HBr}$  ? (Sept/2020)
7. Name the reducing agent used in the reduction of Nitrobenzene to the following compounds,  
(A) Aniline (B) Phenylhydroxylamine (C) Nitrosobenzene (Sept/2020)
8. Write Mustard oil reaction. (Sept/2020) & (Sept/2022)
9. From the following reaction, identify A and B, (Aug/2021)



10. A compound 'A' of molecular formula  $\text{C}_2\text{H}_3\text{N}$  on reduction with  $\text{Na(Hg) / C}_2\text{H}_5\text{OH}$  gives 'B' of molecular formula  $\text{C}_2\text{H}_7\text{N}$  which undergoes carbylamines test. Compound 'B' on reaction with nitrous

acid gives compound 'C' of molecular formula  $C_2H_6O$  by liberating nitrogen. Identify A, B and C and write the reactions involved. **(Aug/2021)**

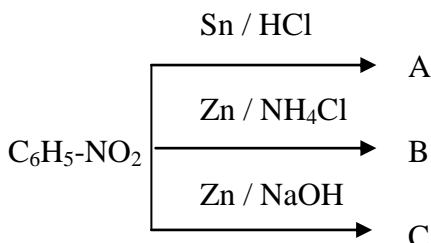
11. Identify A and B in the following sequence of reactions. **(May/2022)**



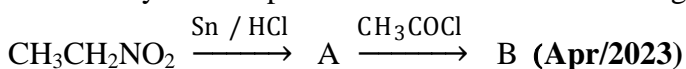
12. Write a note on : Carbylamine reaction **(May/2022)**

13. Write a note on Bromination of aniline **(Sept/2022)**

14. Identify compounds A, B and C for the following. **(Sept/2022)**

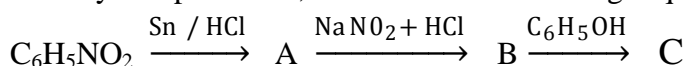


15. Identify the compounds A and B in the following sequence of reactions.



16. Write short note on Trope nitrile Condensation reaction. **(Apr/2023)**

17. Identify compounds A,B and C in the following sequence of reactions. **(June/2023)**



18. Write short notes on a) Schotten – Baumann reaction b) Mustard oil reaction. **(June/2023)**

19. Write the reaction of primary amine with Carbon disulphide **(Mar/2024)**

20. An Organic Compound (A) of molecular formula  $C_2H_4O$  reacts with Zn – Hg/con HCl to give Compound (B) which reacts with  $HNO_3$  forming Compound (C) (as major product) and Compound (D). Compound (C) reacts with con.HCl to give Compound (E) ( Table Vinegar) and hydroxylamine. Identify A,B,C,D and E with suitable reactions. **(Mar/2024)**

21. There are two isomers with the formula  $CH_3NO_2$ . How will you distinguish them?**(June/2024)**

22. How will you distinguish between primary, secondary and tertiary amines ? **(June/2024)**

## UNIT-14

- How are proteins classified based on their structure ? Explain. **(Mar/2020)**
- What is glycosidic linkage? **(Mar/2020)**
- Name the vitamins whose deficiency causes. (a) rickets (b) scurvy **(Jun/2020)**
- How are RNA molecules classified ? Explain . **(Jun/2020)**
- Write a note on denaturation of Proteins. **(Sept/2020)**
- Write any three biological importance of Lipids. **(Sept/2020)**
- Write a short note on peptide bond . **(Aug/2021)& (Mar/2024)**
- Give any three differences between DNA and RNA . **(Aug/2021)**
- What are Epimers ? Give example. **(May/2022)**
- Draw the structure of D(+) Fructose. **(Sept/2022)**
- What is called Zwitter ion ? Give an example. **(Sept/2022& Apr/2023)**
- What are Hormones? Give example. **(Apr/2023)**
- Mention the importance of proteins in living organisms. **(June/2023)**
- Write the structure of the following  $\alpha$ -D-glucopyranose and  $\beta$ -D-glucopyranose **(Mar/2024)**
- How are Vitamins classified? **(June/2024)**
- What are reducing and non reducing sugars ? Give an example **(June/2024)**



17. Draw the structure of all possible dipeptides which can be obtained from glycine and alanine.  
(June/2024)

### UNIT-15

1. State any three advantages of food additives. (Mar/2020)
2. What is Vulcanization? (Mar/2020)&(June/2023)
3. Give a brief account on Antioxidants. (Jun/2020)
4. How do you classify the following into various class of drugs ? (Jun/2020)  
(A) Milk of Magnesia (B) Aspirin (C) Penicillin (D) Procaine
5. How is Neoprene prepared ? (Sept/2020)
6. How do antiseptics differ from disinfectants? (Sept/2020)
7. What are food preservatives ? Give two examples. (Apr/2023)
8. How Nylon-2-nylon-6 is prepared? (Apr/2023)
9. What are bio-degradable polymers? Give example. (June/2023)
10. What are Antibiotics? (Mar/2024)
11. What are bio-degradable polymers ? give an example. (Mar/2024)
12. How is terylene is prepared? (June/2024)
13. Write a note on Synthetic detergents. (June/2024)

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