



QUESTION BANK

BASIC CHEMISTRY (3300011) /SEM-1

SUBJECTIVE QUESTIONS

Sr. No.	Question	BTL	CO
1	Define Catalytic promoter and catalytic inhibitor.		1
2	The Melting Point of sulfur molecule is greater than the phosphor molecule, why?		1
3	Explain the Hydrogen bond with a suitable example.		1
4	Explain types of catalysis with suitable examples.		1
5	Define H-bond and give one example for H-bonded molecules.		1
6	Explain the types of catalysis with example.		1
7	Explain electrovalent (ionic) bond with suitable example.		1
8	Give importance of Hydrogen bonding.		1
9	Write industrial applications of Catalyst.		1
10	Explain Covalent bond with suitable examples.		1
11	What is Hydrogen bond? Write its types with suitable examples.		1
12	What is catalysis? Give its types of with suitable example of each.		1
13	Define Ionic bond and give its one example.		1
14	What is Catalysis? Give classification of Catalysis.		1
15	Draw FCC and BCC types of arrangements.		1
16	Draw the structure: FCC, BCC, HCP		1
17	What is co-ordinate covalent bond? Give one example of it.		1
18	Draw structure of any one network solid.		1
19	What is covalent bond? Give the types of covalent bond and explain polar characteristics of covalent bond.		1
1	Define buffer solution and give the types of and write its applications		2
2	Write the standard condition for an electrochemical cell.		2
3	Calculate the PH of 0.001 M H ₂ SO ₄ Solution.		2
4	Write about any two uses of electrolysis.		2
5	Draw Electro chemical cell and gives its working.		2
6	Write faraday first and second law with equation.		2
7	What is pH? Write importance of pH in various fields.		2
8	Write in short about electroplating.		2
9	Give definition of Degree of Ionization and its equation.		2
10	Write the standard conditions for electrochemical cell.		2
11	Calculate the PH of 0.001 M aqueous HCl solution.		2
12	Define degree of ionization. Explain factors affecting on degree of ionization.		2
13	Write the significance of PH in various fields.		2

14	Define buffer solution, state its types and explain the mechanism of buffer action with suitable example.	2
15	Write a note on Electro Refining of copper.	2
16	Explain construction and working of Electrochemical cell with figure.	2
17	Explain the working of standard hydrogen electrode with neat and labeled diagram.	2
18	Write a brief note on standard hydrogen electrode.	2
19	Write a short note on (1)Electroplating and (2)Electrotyping	2
20	Explain the working of an electro chemical cell with a neat and labeled diagram.	2
21	Explain the working of standard hydrogen electrode with a neat and labeled diagram.	2
22	State Faraday's Laws of Electrolysis.	2
23	Explain three factors which affect the conductivity of electrolyte.	2
24	Define buffer solution and write the types of buffer solution with example.	2
25	Explain Nernst equation for calculating the potential of a non-standard electrochemical cell.	2
26	Explain the process of electrotyping with figure.	2
27	What is buffer solution? Give its types with suitable example	2
28	What is degree of ionisation? List only factors affecting degree of ionisation	2
29	What is electrolysis? Give Faraday laws of electrolysis.	2
30	Define pH and give its industrial applications	2
31	Draw pH scale	2
32	Explain Arrhenius theory for ionization.	2
33	Find out the pH of 0.05 N H ₂ SO ₄ solutions.	2
34	Write industrial application of Electrolysis. Explain extraction of Mg metal.	2
35	Calculate the potential. of the following cell at 25 °C : Zn/Zn ⁺⁺ (5M)// Cu/Cu ⁺⁺ (1M) E ⁰ Zn/Zn ⁺⁺ = 0.76 V , E ⁰ Cu/Cu ⁺⁺ = -0.34 V ,Log5 =0.6990	2
36	Find the pH of 0.01M NaOH solution.	2
37	Calculate the PH of 0.01N KOH solution.	2
38	What is the function of salt bridge in electrochemical cell?	2
1	Define corrosion with suitable example.	3
2	Galvanized containers are not used for storing food stuffs whereas Tin coated can be used, give reason.	3
3	Justify Steel does not get corrode.	3
4	Explain any three factors affecting rate of corrosion.	3
5	Explain Pitting corrosion.	3
6	Explain the factors affecting on rate of Corrosion.	3
7	Explain anodic and cathodic protection of metal from corrosion.	3
8	Describe mechanism of wet corrosion by galvanic cell action.	3
9	What is the method of cathodic protection? Discuss in detail.	3
10	Define inhibitors and write about different types of inhibitors.	3
11	List the factors affecting the rate of corrosion.	3
12	Explain the factors affecting the rate of corrosion.	3
13	Explain the following: 1) Water line corrosion 2) Crevice corrosion.	3
14	What is water-line corrosion? Explain.	3
15	Write short note : (i) Galvanizing (ii) Tinning	3
16	Explain effect of nature of oxide film on rate of corrosion.	3
17	Explain concentration cell corrosion.	3
18	Write short note on crevice corrosion.	3
19	What is Corrosion? Explain atmospheric corrosion.	3

1	Give the list of salts producing hardness in water.		4
2	Differentiate between hard water and soft water.		4
3	A sample of hard water gave on analysis the following result, calculate total hardness in ppm. $\text{Mg}(\text{HCO}_3)_2 = 7.3 \text{ mg/lit}$, $\text{Ca}(\text{HCO}_3)_2 = 81 \text{ mg/lit}$, $\text{CaSO}_4 = 27.2 \text{ mg/lit}$ $\text{CaCl}_2 = 11.1 \text{ mg/lit}$		4
4	Explain zeolite method for softening of water.		4
5	List the effects of hard water when used in boiler. Discuss any one in detail.		4
6	Explain- Ion exchange process for softening water with neat sketch and chemical reactions.		4
7	Calculate the temporary, permanent and total hardness of the water sample containing following salts: $\text{Ca}(\text{HCO}_3)_2 = 8.1 \text{ ppm}$, $\text{CaCl}_2 = 11.1 \text{ ppm}$, $\text{MgCl}_2 = 95.0 \text{ ppm}$, $\text{MgSO}_4 = 24.0 \text{ ppm}$.		4
	Calculate the temporary, permanent and total hardness of the water sample containing following salts- $\text{Ca}(\text{HCO}_3)_2 = 8.1 \text{ ppm}$, $\text{CaCl}_2 = 11.1 \text{ ppm}$, $\text{MgCl}_2 = 19.0 \text{ ppm}$, $\text{MgSO}_4 = 12.0 \text{ ppm}$.		4
8	Define – Degree French, Degree Clerk.		4
9	Differentiate between hard water and soft water.		4
10	Hardness of water sample is 300 French. Find the hardness of water in terms of ppm, mg/lits and 0clerk.		4
11	Write short note on permutit method for softening of water		4
12	Explain soda lime process for softening of water.		4
13	List the effect of hard water when used in boiler and discuss any one in detail.		4
14	Write a note on reverse osmosis.		4
15	Write short note on ion-exchange method for softening of water.		4
16	Give molecular weight of CaCl_2 and MgSO_4 .		4
17	Give the names of methods used to remove hardness of water.		4
18	Explain- permutit process with neat sketch and chemical reactions. How will you regenerate the permutit resin?		4
1	Define:- Functional group and Isomerism		5
2	Classify organic compounds with example.		5
3	Differentiate between organic compounds and inorganic compounds.		5
4	Write preparation, properties and uses of Ethylene.		5
5	Give one preparation, property and uses of ethane.		5
6	Define functional group. Give the classification of organic compound.		5
7	Define – Functional group.		5
8	Explain saturated and unsaturated hydrocarbon.		5
9	Define σ -bond and π - bond.		5
10	Give the general formula of alkane and alkenes.		5
11	Give the classification of organic compounds.		5
12	Explain chain isomerism and position isomerism with example.		5
13	What is hydrocarbon? Write types of hydrocarbons.		5
14	Describe- Fractional distillation of coal-tar in detail.		5
1	Give a selection of lubricants for cutting tools and gears.		6
2	Define (1) Saponification number (2) fire point		6
3	Define Lubricant and explain fluid film lubrication.		6

4	Explain any two physical or chemical properties of Lubricant.	6
5	Explain boundary lubrication with suitable example.	6
6	Define Lubricants and write functions of Lubricant.	6
7	What the difference is between flash and fire point?	6
8	Define lubricants and write two functions of lubricants.	6
9	Define the following: (a) viscosity index (b) cloud point (c) saponification number.	6
10	Define Viscosity and saponification number of lubricants	6
11	Explain briefly Fluid film lubrication.	6
12	Explain: What type of lubricants would you select for gears.	6
13	Give classification of lubricants.	6
14	Define Flashpoint and Fire point.	6
15	Define pour point and cloud point.	6
16	What are Acid number and Saponification number?	6
1	Differentiate between Addition and Condensation polymerization.	7
2	Explain vulcanization of rubber and its advantages.	7
3	Write a short note on (1) Bakelite (2) Nylon-66	7
4		7
5	Write names and structural formulas of monomers used in PAN and Teflon	7
6	Give classification of polymers on basis of molecular structure and give a classification of each class.	7
7	Write preparation properties and uses of Polystyrene.	7
8	Write preparation, properties, and uses of PTFE (Teflon)	7
9	Classify Polymers based on monomer.	7
10	Write names and structures of monomers of Polyethylene and Polyvinyl chloride.	7
11	Define Polymer and Monomer.	7
12	Distinguish between thermoplastic and thermosetting plastic.	7
13	Define insulating material state the properties and uses of (a) glass wool and (b) Thermocole	7
14	Give synthesis, properties, and uses of following (a) Bakelite (b) Neoprene	7
15	Give the name and structure of monomers used in Teflon and PVC.	7
16	Write drawbacks of natural rubber.	7
17	What is Vulcanized rubber? Explain the advantages of Vulcanization.	7
18	Explain condensation polymerization with suitable example.	7
19	What are thermoplastics and thermosetting plastics, give examples for each.	7
20	Differentiate between addition and condensation polymers. (four points)	7
21	Write four points of difference between natural and synthetic rubber.	7
22	Explain the properties of (a) polystyrene (b) Bakelite	7
23	Explain classification of polymers based on the molecular structure giving example.	7
24	List four advantages offered by polymers over conventional materials.	7
25	Write the name of monomers of Bakelite, Buna – N, and Buna - S	7
26	Write the monomers and uses of polyethylene, PVC and orlon.	7
27	State characteristics of good adhesives.	7
28	Write only names and structural formulas of monomers used in PVC and TEFLON	7
29	Give classification of polymers on basis of monomers with suitable examples.	7
30	Differentiate between oil paint and varnish.	7

31	Write the characteristics of adhesives./ Give the characteristics of adhesives.		7
32	Write the name of monomers of Bakelite and Epoxy resin.		7
33	Explain classification of polymer based on thermal behavior and structure.		7
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