# QUESTION BANK

## BAASIC CHEMISTRY (4300011) / SEM-1

### SUBJECTIVE QUESTIONS

| Sr. No. | Question | BTL | CO |
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| 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 |
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| 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 H2SO4 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 |

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| 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 $H_2SO_4$ solutions. | | 2 |
| 34 | Write industrial application of Electrolysis. Explain extraction of Mg metal. | | 2 |
| 35 | Calculate the potential. of the following cell at 25 $^0$C : Zn/Zn++ (5M )// Cu/Cu++ (1M)<br>E0 Zn/Zn++ = 0.76 V , E0 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 |
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| 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. | | |
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| 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 | | 4 |

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| | hardness in ppm. Mg(HCO3)2= 7.3 mg/lit, Ca(HCO3)2= 81 mg/lit, CaSO4= 27.2 mg/lit CaCl2= 11.1 mg/lit | | |
| 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:$Ca(HCO_3)_2$= 8.1 ppm, $CaCl_2$ = 11.1ppm, $MgCl_2$ = 95.0ppm, $MgSO_4$ = 24.0ppm. | | 4 |
| | Calculate the temporary, permanent and total hardness of the water sample containing following salts-$Ca(HCO_3)_2$= 8.1ppm, $CaCl_2$ = 11.1 ppm, $MgCl_2$ =19.0 ppm, $MgSO_4$ = 12.0 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 CaCl2 and MgSO4. | | 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 |
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| 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 |
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| 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 |

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| 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 |
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| 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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