Chemistry - FSC Part 1 Chemistry Full Book Short Question Preparation

Q1. What is meant by electromotive force (emf) of cell?

Ans 1: Electromotive force (emf): The electric current obtained from galvanic cell is a result of electrons being pushed or forced from the negative electrode, throughout an external wire, to positive electrode. The force with which these electrons move throughout the wire is called electromotive force. It is also called potential . It measured in volts.

Q2. Define energy of Activation.How it is affected by temperature?

Ans 1: The minimum amount of energy which molecules must have in addition to their average K.E to form an activated complex is called activation energy. It is denoted by "E".
Many chemical reactions do not take place at room temperature because molecules have low K.E than the activation energy.Thus the activation energy is necessary to start a reaction.

Q3. **How the slow neutrons prove to be more effective than the fast neutrons?**

Ans 1:

Q4. **Distinguish between actual and theoretical yield.**

Ans 1:

Q5. **What is solvent extraction?**

Ans 1: This is a technique in which a solute is separated from the solution. For this purpose, the solution is shaken with another solvent in which the solute is more soluble. Anyhow, the added solvent should not be miscible with thesolution.

Q6. Zn can displace hydrogen from dilute acid solution but copper cannot.
Justify the statement?

Ans 1:

Q7. What are the names major parts of apparatus used in Landsberger's method for elevation of boiling point?

Ans 1:

1. An inner tube with a hole in its side.This tube is graduated.
2. A boiling flask which send the solvent vapours into the graduated tube through a rosehead..
3. An outer tube, which receives hot solvent vapours coming from the side hole of the inner tube.
4. A thermometer which can read up to 0.01K.

Q8. How the temperature of the system change during exothermic and endothermic reactions?

Ans 1: In an exothermic reaction, heat is evolved which increases the temperature of the system. In an endothermic reaction, heat is absorbed, so the temperature of the system falls down. These statements are true when the system is isolated.

Q9. Testing Question

Ans 1: Testing Answer 1

Q10. **Why the photographic plate is white and few dark lines are there in the line absorption spectra of a substance?**

Ans 1: Some of the photons are absorbed by the sample to excite the electrons of and substance from lower energy levels to higher energy levels. These photons of light don't reach the photographic plate. Rest of the light reaches the photographic plate, arid the plate is white. Only those places are dark in the form of sharp lines where the photon don't reach.

Q11. Differentiate between continuous and discontinuous solubility curves?

Ans 1: Continuous Solubility Curve: These are smooth curves and do not show any sharp break points.(Continuous increase or decreases in solubility with temperature.e.g.Solubility curves of $KClO_3$,$K_2Cr_2O_7$ Etc.

Discontinuous Solubility Curves: These are not smooth and shows sudden breaks due to sudden changes in solubilities.e.g.Solubility curves of Na_2SO_4,$CaCl_2$ etc.

Q12. Write the importance of standard hydrogen electrode?

Ans 1: Standard hydrogen electrode (SHE) is used to determine the electrode potential of other electrode.It is used as reference electrode and its value is 0.0 volt. From SHE we drive electrochemical series.

Q13. **How do you justify that all the bonds between I-A and II-A with VI-A and VII-A are not equally ionic?**

Ans 1: The I.E. values of the I-A are less than II-A and the E.A. of VII-A are greater than VI-A. So, the bond between IA and VII-A should be ionic to a good extent. The bonds between II-A and VI-A should be poorly ionic. It means that all the above mentioned compounds are not equally ionic.

Q14. Can sugar cannot be dissolved in benzene.Give reason?

Ans 1: Can-sugar is apolar covalent substance and it is soluble in polar solvent like water. Sugar dissolve in water due to the formation of H-bonding between solute-solvent,but not in benzene.As we simply say that solubility based upon principle"Like dissolves like".

Q15. Give four rules for assigning of oxidation number?

Ans 1:

1. The oxidation number of free elements is zero.For example H, Mg, Na.as charge on the ion.

2. Oxidation number of hydrogen in all its compounds is +1 except metal hydride where it is -1
3. In neutral molecules, the algebric sum of oxidation number of all the elements is zero.

Q16. **Why the ionization energies decrease down the group although the nuclear charges increase?**

Ans 1: When we go down the group, the number of shells increase and shielding effects also increase. These two factors decrease the force of attraction between the nucleus and the outermost electrons and is a cause of decreasing ionization energy.

Q17.

Define sublimation with an example?

Ans 1: The vapourization of a solid directly on heating without passing through the liquid phase and the condensation of these vapours on cooling to solid without passing through liquid phase is called sublimation. Naphethalene, Iodive, NH_4CI, Benzoic acid and Camphor undergo sublimation.

Q18.

Gases deviate more from the general gas equation at 0° C and deviate to less extent at 100° C. why?

Ans 1: At 0° C, the forces of attractions are dominant and gases become non-ideal. At high temperature attractive forces become less dominant and gases behave ideally.

Q19. **Concentrated MCI and KMNO. Solutions cannot be filtered by Gooch crucible. Give reason.**

Ans 1: Conc. HCI and the oxidizing agents like KmnO, react with filter paper. By using Asbestos mate. The above solutions can be filtered.

Q20. **What is R_f value?**

Ans 1:

Ans 2:

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