

Chemistry - FSC Part 1 Chemistry Full Book Short Question Preparation

Q1. What is R _f value?
Ans 1:
Ans 2: •
Q2. What is ether extraction?
Ans 1: Some organic products are prepared in aqueous medium. We have to remove this organic compound from water. For this purpose, ether is added. Two separate layers are produced in the separating funnel. The ether layer contains the organic compound. This ether layer is separated and ether is evaporated.
Q3. Testing Question
Ans 1: Testing Answer 1
Q4. Define boiling point. Is it related with the external pressure?
Ans 1: Boiling point is that temperature of the liquid at which the vapour pressure of the liquid is equal to the external pressure. If the external pressure is higher, then the boiling point of the liquid is increased. If the external presser is decreased, then the boding point decreases. The boiling of water is low at mountains. Due to the change in external pressure.
Q5. Ionization energy of the element is the binding energy of the nucleus and the electron. Why is it measured when the atom is in the gaseous state?
Ans 1: The outermost electrons are attracted by the nucleus. If the atom is closer to some other atom of its own kind or of different kinds, then the outermost electrons are being attracted or repelled by other species as well. In that situation, it is not possible to guess the forces of attractions within the nucleus and the outermost electron.
Q6. What are application of buffer in daily life?
Ans 1: Buffers are important in many areas of chemistry and allied science like molecular biology, microbiology, cell biology, soil science, nutrition and the clinical analysis.

Q7. What is the difference between primary and secondary cells?

Ans 1: Primary Cells: The cells which cannot be recharged are called primary cells.e.g Dry cells.

Secondary Cells: The cells which can be recharged are called secondary cells.e.g. Fuel cells.

Q8. What is meant by heat(q) and work (W) in thermochemistry?

Ans 1: There are two fundamental ways of transferring energy to or from a system. These are heat and work. Heat is not a property of a system. It is therefore not a state functions. Heat evolved or absorbed by the system is represented by a symbolq. Work is also a form in which energy is transferred from one system to another.

Q9. Why hydration energy of Na⁺ Ion is less than Li⁺ Ion?

Ans 1: Hydration energy of an ion depends upon two parameters.

- 1. Ionic Radii
- 2. Charge density

Greater the ionic radii of monopositive ions, smaller is the heat of hydration and vice versa. Hence Na⁺ Has greater size than Li⁺ That's why its heat of hydration is low.

Q10. Differentiate between zeotropic and azeotropic mixture?

Ans 1: Zeotropic Mixtures: The liquid mixtures which distills with change in composition is called zeotropic mixtures, e.g. Methyl Alcohol-water solution.

Azeotropic Mixtures: The liquid mixtures which boil at constant temperature and distill over without changes in composition like a pure compound at any temperature is called azeotropic mixtures.eg, HCI formsazeotropic with water.

Q11. 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, and the plate is white. Only those places are dark in the form of sharp lines where the photon don't reach.

Q12.

Is it true that the sum of Pka and pKb is always equal to 14 at all temperature for any acid?

Ans 1:

It is not true because pK_a and pK_b values are temperature dependent. The degree of ionization of any acid increases as the temperature increases. Hence the value of Pk_a and pK_b change with change in temperature.

Q13. How does Bohr introduce the Planck's quantum theory in his model?

Ans 1: Bohr proposed that electrons move around the nucleus in the fixed orbits with definite energies. Whenever, they change the orbits they emit or absorb the energy in terms of photons which was suggested by Planck.

Q14. Define catalysis. Name its two types?

Ans 1: The process which take place in the presence of a catalyst is called catalysis. There are two types of it.

- 1. Homogeneous catalysis
- 2. Heterogeneous catalysis

Q15. 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.

Q16. Define solubility giving one example?

Ans 1: The solubility is defined as the concentration of the solute in the solution when it is in equilibrium with the solid substance at a particular temperature. Solubility is expressed in terms of number of grams of solute in 100g of solvent. At a particular temperature, saturated solution of NaCl in water at O° C contains 37.5g NaCl in 100g of water.

Q17. Define Solubility product and write down its application?

Ans 1: Solubility product: The product of molar concentration of oppositely charged ions , in equilibrium with its solid salt in its saturated solution at a given temperature is called solubility product. Its is denoted by K_{SP} Application of K_{Sp}:

- Determination of KSP From solubility.
- Effect of common ion on solubility.

Q18. Define electrolytic cell. Give example?

Ans 1: Electrolytic cell: A cell is which electric current is used to carry out a non-spontaneous reaction is called electrolytic cell. Example:

- Down's cell
- Nelson cell

Q19. Define molal freezing point constant giving example.

Ans 1: It is depression of freezing point, when one mole of non-volatile and non-electrolyte solute is dissolved in one kg of solvent.

Q20. What is analytical chemistry?

Ans 1:

That branch of chemistry which deals with the quantitative and qualitative analysis is called analytical chemistry.