Top 22 Chemistry Interview Questions & Answers

1)   Explain the term Aliquot and Diluent?

- Aliquot : It is a measured sub-volume of original sample
- Diluent: Material with which sample is diluted

2)   Explain what is molality?

Molality is the number of solute that is present in 1 kg of a solvent.

3)   Explain what is titration?

Titration is a process to determine the molarity of a base or an acid. In this process a reaction is carried out between the known volumes of a solution with a known concentration, against the known volume of a solution with an unknown concentration.

4)   Explain what is buffer?

A buffer is an aqueous solution which has highly stable pH. It is a blend of a weak acid and its conjugate base or vice versa. On adding small amount of base or acid to buffer, its pH hardly changes.

5)   Explain how buffer works?

In buffer when hydrogen ion is added, it will neutralized by the base in buffer. Hydroxide ion will be neutralized by the acid. On the overall pH of the buffer solution, these neutralization reactions will not show much effect.

While when you select an acid as a buffer solution, try to use an acid acid that has a pH closed to your desired pH. This will help your buffer to achieve nearly equivalent amount of acid and conjugate base, so that it will enable to neutralize as much as H+ and OH -.
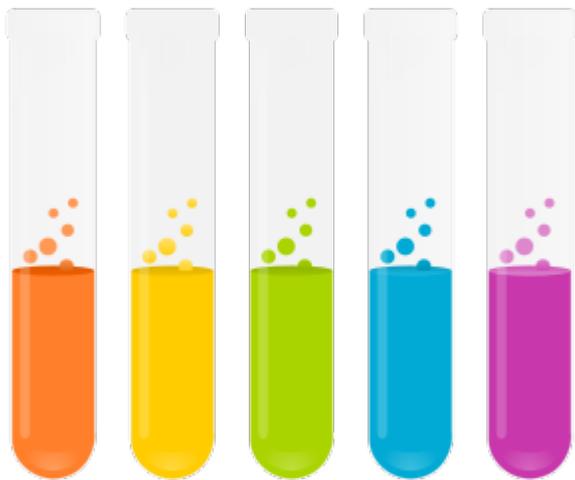
6)   Explain what is mole?

Mole is the unit used to define the number of chemical substance present in a substance. It is the amount of substance which consists of the same number of chemical units as there are atoms in exactly 12 gram of pure carbon-12.

7)   How will you calculate how many moles of glucose present in 320 mL of 5.0 M of glucose solution?

First step: Convert the volume from millilitres to litres

- 320 X (1 litre/1000mL) = 0.320 L solution

Second use the formula = M x V

= 5.0 moles glucose/ litre solution X 0.320 L solution

= 1.6 moles of glucose present in 320mL of solution

8)   Explain what is the difference between fractionation and distillation?

Both methods are used to separate the components present in the solution based on the melting points

- Distillation : This technique is used when boiling point of chemicals are different in the mixtures
- Fractionation : This technique is used when boiling point of chemicals are close to each other in the mixtures

9)   Mention the formula to calculate pH of a solution?

In order to calculate the pH of a solution you have to use the formula pH= -log [H+] or pH = -log [H3O+]

10)   Explain what is the difference between Molarity and Normality?

Both techniques are used to the amount of chemical present in the solution. However they are almost similar but differs in

| Molarity | Normality |

– Molarity is used to know the total amount of molecules in a 1 litre solution	– Normality is used to know the total number of reactive units in 1 litre of solution
– It is expressed as moles of a compound per litre of solution	– It is expressed in equivalent per litre

11) Explain what is Valency?

A valency is a property of a groups or atoms, equal to the number of atoms of hydrogen that the group or atom could combine with or displace it in forming compounds.

12) Define what is Avogadro's law?

According to Avogadro's law, at same temperature and pressure equal volume of gases contains the same number or molecules regardless of the chemical nature and physical properties.

Avogadro's number = $6.023 \times 10 (-23)$

13)   Explain what makes a molecule into organic molecule?

In a molecule when hydrogen atom is less than the ratio of carbon atom, then such molecules are referred as an organic molecule.

14) Explain what is the metal used to extract copper from the solution of copper sulphate?

Fe or ferrous is the metal that is used to extract copper from the solution of copper sulphate.

15) Explain what is the chemical composition of fat in human body?

Fat found in human body is mainly composed of

- Glycerides
- Glycerides+Phospholipids
- Glycolipids
- Phosphoinotisides
- Tocopherol

16)   What is the monomer of polyethene?

The monomer of polyethene is ethylene

17)   Explain what is the formula you will use to calculate how many millilitres of 5.5 M NaOH are required to prepare 400 mL of 1.5M NaOH?

To know the amount or volume of NaOH to prepare 400 mL of 1.5 M NaOH, we use formula

$M_1 \times V_1 = M_2 \times V_2$

$V_1 = M_2 \times V_2 / M_1$

But before that we will convert 400 mL into litre = 0.4 L

$5.5 \times V_1 = 1.5 M \times 0.4 L$

V1 = 1.5 M X 0.4L/ 5.5

V1= 0.10 L

V1 = 100mL

So, you need 100mL of 5.5 NaOH

18) Explain why graphite rod is used in nuclear reactor?

Graphite rod is used in nuclear reactor to convert fast moving neutrons into thermal neutrons.

19) Mention how many millilitre is equal to 1 litre and how many microliter is equal to litre?

- 1 millilitre = 0.0001 litre
- 1 microliter = 0.0000001 litre

20) Define what is oxidation and reduction reaction?

- Oxidation = When there is a loss of hydrogen or electrons, OR gain of oxygen is known as Oxidation reaction.
- Reduction = When there is a gain of hydrogen or electron OR loss of oxygen is known as reduction reaction

Example of oxidation-reduction reaction is observed in human body, when an electron is transferred into the cell and oxidation of glucose take place from which we get the energy.

21) Explain what is iron ore consists of?

Iron ore is consists of Fe2O3

22) Explain what is dextro-rotatory and levo-rotatory?

Levorotation and Dextrorotation is referred to the properties of plane polarized light, when light rotates clockwise when it approaches the observer is then known as dextro-rotation and when the light rotates anti-clockwise then it is referred as levo-rotation.

A compound which exhibits a dextro-rotation is referred as dextro-rotatory and which exhibits levo-rotation is referred as levo-rotatory.

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