**Karan Arora**  **R.L. Institute M: 9416974837**

**Max Time : 1 hr** **Class = 11th Chemistry Test**  **Max Marks : 25**

**Topic : Some Basic Concepts Of Chemistry**

1. The highest number of helium atoms is in :

|  |  |
| --- | --- |
| a) 4 g Helium | b) 2.271098 L of helium at STP |
| c) 4 mol of Helium | d) 4 u of Helium |

1. A compound X contains 32 % of A , 20 % of B and remaining percentage of C. Then the empirical formula of X is : \_\_\_\_\_\_\_ [ At. Mass : A = 64 , B = 40 , C = 32].

|  |  |  |  |
| --- | --- | --- | --- |
| a) AB2C2 | b) ABC4 | c) A2BC2 | d) ABC3 |

1. The right option for the mass of CO2 produced by heating 20 g of 20 % pure limestone is :

CaCO3 CaO + CO2.

|  |  |  |  |
| --- | --- | --- | --- |
| a) 1.76 g | b) 2.64 g | c) 1.32 g | d) 1.12 g |

1. What mass of 95 % pore CaCO3 will be required to neutralized 50 mL of 0.5 M HCl solution according to the following reaction? CaCO3 (s) + 2 HCl (aq) CaCl2 (aq) + CO2(g) + H2O (l)

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| --- | --- | --- | --- |
| a) 1.32 g | b) 3.65 g | c) 9.50 g | d) 1.25 g |

1. An organic compound contain 78 % (by wt.) carbon and remaining percentage of hydrogen. The right option for the empirical formula of this compound is :

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| --- | --- | --- | --- |
| a) CH4 | b) CH | c) CH2 | d) CH3 |

1. The number of moles of hydrogen molecules required to produce 20 moles of ammonia through Haber’s process is :

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| --- | --- | --- | --- |
| a) 40 | b) 10 | c) 20 | d) 30 |

1. The density of 2 M aqueous solution of NaOH is 1.28 g/cm3. The molality of the solution is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 1.2 m | b) 1.56 m | c) 1.67 m | d) 1.32 m |

1. In which case in number of molecules of water is maximum?

|  |  |
| --- | --- |
| a) 18 mL of water | b) 0.18 g of water |
| c) 0.00224 L of water vapors at 1 atm and 273 K | d) 10 – 3  mol of water |

1. Suppose the element X and Y combine to form two compounds XY2 and X3Y2. When 0.1 mole of XY2 weighs 10 g and 0.05 mole of X3Y2 weighs 9 g, the atomic weighs of X and Y are :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 40 , 30 | b) 60 , 40 | c) 20 , 30 | d) 30 , 20 |

1. The number of water molecules is maximum in :

|  |  |
| --- | --- |
| a) 1.8 g of water | b) 18 g of water |
| c) 18 moles of water | d) 18 molecules of water |

1. Which has the maximum number of molecules among the following:

|  |  |  |  |
| --- | --- | --- | --- |
| a) 44 g CO2 | b) 48 g O3 | c) 8 g H2 | d) 64 g SO2 |

1. The number of atoms in 0.1 mol of a triatomic has is :

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| --- | --- | --- | --- |
| a) 6.026 x 1022 | b) 1.806 x 1023 | c) 3.600 x 1023 | d) 1.800 x 1022 |

1. An element X has the following isotopic composition: 200X : 90 % ; 199X : 8.0 % ; 202X : 2.0%

The weighted average atomic mass of the naturally-occurring element X is closest to :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 201 amu | b) 202 amu | c) 199 amu | d) 200 amu |

1. The maximum number of molecules is present in :

|  |  |
| --- | --- |
| a) 15 L of H2 gas at STP | b) 5 L of N2 gas at STP |
| c) 0.5 g of H2 gas | d) 10 g of O2 gas |

1. What has the maximum molecules :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 7 g N2 | b) 2 g H2 | c) 16 g NO2 | d) 16 g O2 |

1. Volume of CO2 obtained by the complete decomposition of 9.85 g of BaCO3 is :

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| --- | --- | --- | --- |
| a) 2.24 L | b) 1.12 L | c) 0.84 L | d) 0.56 L |

1. 1 cc N2O at NTP contains :

|  |  |
| --- | --- |
| a) x 1022 atoms | b) x 1023 molecules |
| c) x 1023 electrons | d) All of the above |

1. The amount of zinc required to produce 224 mL of H2 at STP on treatment with dilute H2SO4 will be :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 65 g | b) 0.065 g | c) 0.65 g | d) 6.5 g |

1. The number of moles of oxygen in one litre of air containing 21 % oxygen by volume, under standard conditions is :

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| --- | --- | --- | --- |
| a) 0.0093 mol | b) 2.10 mol | c) 0.186 mol | d) 0.21 mol |

1. The total number of valence electrons in 4.2 g of ion is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 2.1 NA | b) 4.2 NA | c) 1.6 NA | d) 3.2 NA |

1. Which of the following fertilizers has the highest nitrogen percentage?

|  |  |
| --- | --- |
| a) Ammonium sulphate | b) Calcium cyanamide |
| c) Urea | d) Ammonium nitrate |

1. Boron has two stable isotopes, 10B(19 %) and 11B(81 %). Calculate average atomic weight of boron in the periodic table:

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| --- | --- | --- | --- |
| a) 10.8 | b) 10.2 | c) 11.2 | d) 10 |

1. What is the weight of oxygen required for the complete combustion of 2.8 kg of ethylene?

|  |  |  |  |
| --- | --- | --- | --- |
| a) 2.8 kg | b) 6.4 kg | c) 9.6 kg | d) 96 kg |

1. The number of oxygen atoms in 2.8 g of CO is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 1.2 x 1023 | b) 6 x 1022 | c) 6 x 1023 | d) 12 x 1023 |

1. At STP the density of CCl4 vapour in g/L will be nearest to :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 6.87 | b) 3.42 | c) 10.26 | d) 4.57 |