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**Max Time : 1 hr** **Class = 11th Chemistry Test Max Marks : 4 x 30**

**MOLE CONCEPT**

1. The number of atoms in 4.25 g of NH3 is approximately :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 1 x 1023 | b) 1.5 x 1023 | c) 2 x 1023 | d) 6 x 1023 |

1. Which one of the following contains maximum number of oxygen atoms?

|  |  |
| --- | --- |
| a) 1 g of O | b) 1 g of O2 |
| c) 1 g of O3 | d) all have the same number of atoms |

1. The number of atoms present in 0.5 g atom of nitrogen is same as the atoms in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 12 g of C | b) 32 g of S | c) 8 g of oxygen | d) 24 g of Mg |

1. Which of the following contains maximum number of atoms?

|  |  |  |  |
| --- | --- | --- | --- |
| a) 4 g of H2 | b) 16 g of O2 | c) 28 g of N2 | d) 18 g of H2O |

1. Number of neutrons present in 1.7 g of ammonia is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) NA | b) NA/10 x 4 | c) (NA/10) x 7 | d) NA x 10 x 7 |

1. 5.6 L of oxygen at STP contains:

|  |  |  |  |
| --- | --- | --- | --- |
| a) 6.02 x 1023 atoms | b) 3.01 x 1023 atoms | c) 1.505 x 1023 atoms | d) 0.7525 x 1023 atoms |

1. Number of oxygen atoms in 8 g of ozone is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 6.02 x 1023 | b) | c) | d) |

1. Sum of number of protons, electrons and neutrons in 12 g of 6C12 is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 1.8 | b) 12.044 x 1023 | c) 1.084 x 1025 | d) 10.84 x 1023 |

1. The weight of one atom of uranium is 238 amu. Its actual weight is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 1.43 x 1026 | b) 3.94 x 10 – 22 | c) 6.99 x 10 – 23 | d) 1.53 x 10 – 22 |

1. The actual weight of a molecule of water is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 18 g | b) 2.99 x 10 – 23 g | c) Both (a) & (b) | d) 1.66 x 10 – 24 g |

1. What is the mass of a molecule of CH4 :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 16 g | b) 26.6 x 10 22 g | c) 2.66 x 10 – 23 g | d) 16 NA g |

1. Which of the following has the highest mass?

|  |  |
| --- | --- |
| a) 1 g atom of C | b) ½ mole of CH4 |
| c) 10 mL of water | d) 3.011 x 10 23 atoms of oxygen |

1. Which of the following contains the least number of molecules?

|  |  |  |  |
| --- | --- | --- | --- |
| a) 4.4 g CO2 | b) 3.4 g NH3 | c) 1.6 g CH4 | d) 3.2 g SO2 |

1. The number of molecules in 4.25 g of NH3 is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 1.505 x 1023 | b) 3.01 x 1023 | c) 6.02 x 1023 | d) None of these |

1. Element A and B form two compounds B2A3 and B2A. 0.05 moles of B2A3 weight 9 g and 0.1 mole of B2A weight 10 g. Calculate the atomic weight of A and B :

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

1. 5.6 L of oxygen at NTP is equivalent to :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 1 mol | b) 1/2 mol | c) 1/4 mol | d) 1/8 mol |

1. 4.4 g of an unknown gas occupies 2.24 L of volume at STP. The gas may be :

|  |  |  |  |
| --- | --- | --- | --- |
| a) N2O | b) CO | c) CO2 | d) both (a) & (c) |

1. Which contains least number of molecules:

|  |  |  |  |
| --- | --- | --- | --- |
| a) 1 g CO2 | b) 1 g N2 | c) 1 g O2 | d) 1 g H2 |

1. If ‘V’ mL of the vapours of substance at NTP weight ‘W’ g. Then molecular weight of substance is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) (W/V) x 22400 | b) (V/W) x 22.4 | c) (W – V) x 22400 | d) |

1. If 3.01 x 1020 molecules are removed form 98 mg of H2SO4, then the number of moles of H2SO4 left are :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 0.1 x 10 – 3 | b) 0.5 x 10 – 3 | c) 1.66 x 10 – 3 | d) 9.95 x 10 – 2 |

1. The volume of a gas in discharge tube is 1.12 x 10 – 7 mL at STP. Then the number of molecule of gas in the tube is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 3.01 x 104 | b) 3.01 x 1015 | c) 3.01 x 1012 | d) 3.01 x 1016 |

1. The number of electron in 3.1 mg of is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 32 | b) 1.6 x 10 – 3 | c) 9.6 x 1020 | d) 9.6 x 1023 |

1. Given that 1 mole of N2 at NTP occupies 22.4 L the density of N2 is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 1.25 g L – 1 | b) 0.80 g L – 1 | c) 2.5 g L – 1 | d) 1.60 g L – 1 |

1. The number of carbon atoms present in a signature, if a signature written by carbon pencil, weighing 1.2 x 10 – 3 g is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 12.04 x 1020 | b) 6.02 x 1019 | c) 3.01 x 1019 | d) 6.02 x 1020 |

1. The volume of a gas at 0 and 700 mm pressure is 760 cc. The number of molecules present in this volume is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 1.88 x 1022 | b) 6.022 x 1023 | c) 18.8 x 1023 | d) 18.8 x 1022 |

1. The number of moles of CO2 which contain 8 g oxygen is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 0.5 mole | b) 0.2 mole | c) 0.4 mole | d) 0.25 mole |

1. If 224 mL of a triatomic gas has a mass of 1 g at 273 K and 1 atm pressure, then the mass of one atom is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 8.30 x 10 – 23 g | b) 2.08 x 10 – 23 g | c) 5.53 x 10 – 23 g | d) 6.24 x 10 – 23 g |

1. How many moles of magnesium phosphate, Mg3(PO4)2 will contain 0.25 mol of oxygen atoms?

|  |  |  |  |
| --- | --- | --- | --- |
| a) 2.5 x 10 – 2 | b) 0.02 | c) 3.125 x 10 – 2 | d) 1.25 x 10 – 2 |

1. 22.4 L water vapours at NTP, When condensed to water occupies an approximate volume of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 18 L | b) 1 L | c) 1 mL | d) 18 mL |

1. Volume occupied by one molecule of water (density = 1 g/cm3) is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 3 x 10 – 23 cm3 | b) 5.5 x 10 – 23 cm3 | c) 9 x 10 – 23 cm3 | d) 6.023 x 10 – 23 cm3 |

**Answers**

**Mole Concept [CLASS = 11th ]**

|  |
| --- |
| 1. d |
| 1. d |
| 1. c |
| 1. a |
| 1. c |
| 1. b |
| 1. b |
| 1. c |
| 1. b |
| 1. b |
| 1. c |
| 1. a |
| 1. d |
| 1. a |
| 1. c |

|  |
| --- |
| 1. c |
| 1. d |
| 1. a |
| 1. a |
| 1. b |
| 1. c |
| 1. c |
| 1. a |
| 1. b |
| 1. a |
| 1. d |
| 1. c |
| 1. c |
| 1. d |
| 1. a |