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**Max Time : 1 hr** **Class = 11th Chemistry Test Max Marks : 21**

**MOLE CONCEPT – 1**

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

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

1. If Avogadro number NA, is changed from 6.022 X 1023 mol-1 to 6.022 X 1020 mol-1 this would change

a) the definition of mass in units of grams

b) the mass of one mole of carbon

c) the ratio of chemical species to each other in a balanced equation

d) the ratio of elements to each other in a compound

1. 20.0 g of magnesium carbonate sample decomposes on heating to give carbon dioxide and 8.0 g of magnesium oxide. What will be the percentage purity of magnesium carbonate in the sample? [Atomic weight of Mg = 24]

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| a) 75 | b) 96 | c) 60 | d) 84 |

1. What is the mass of precipitate formed when 50ml of 16.9% solution of AgNO3 is mixed with 50 ml of 5.8% NaCl solution [Ag=107.8, N=14, O=16, Na=23, Cl =35.5]

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| a) 28 g | b) 3.5 g | c) 7 g | d) 14 g |

1. When 22.4 L of H2[g] is mixed with 11.2 L of Cl2[g] , each at STP, the moles of HCL[g] formed is equal to

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| a) 1 mole of HCL (g) | b) 2 mole of HCL (g) | c) 0.5 mole of HCL (g) | d) 1.5 mole of HCL (g) |

1. 1 g of magnesium is burnt with 0.56 g of oxygen in a closed vessel. Which reactant is left in excess and how much ? (At. Weight of Mg = 24, O = 16 )

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| a) Mg, 0.16 g | b) O2 , 0.16 g | c) Mg, 0.44 g | d) O2 , 0.28 g |

1. 6.02 X 1020 molecules of urea are present in 100 ml of its solution. The concentration of solution is

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| a) 0.02 M | b) 0.01 M | c) 0.001 M | d) 0.1 M |

1. The number of water molecules is maximum in

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

1. How many gram of concentrated Nitric acid solution should be used to prepare 250 ml 2.0 M HNO3 ? The concentrated acid is 70% HNO3 .

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| a) 45.0 g conc. HNO3 | b) 90.0 g conc. HNO3 | c) 70.0 g conc. HNO3 | d) 54.0 g conc. HNO3 |

1. The number of atoms in 0.1 mole of a triatomic gas is (NA = 6.023 X 1023 mol-1)

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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. The number of gram molecules of oxygen in 6.02 X 1024 CO molecules is

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| a) 10 g molecules | b) 5 g molecules | c) 1 g molecule | d) 0.5 g molecule |

1. 10g of hydrogen and 64 g of oxygen were filled in a steel vessel and exploded. Amount of water produced in this reaction will be

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| a) 2 moles | b) 3 moles | c) 4 moles | d) 1 moles |

1. Volume occupied by 1 molecule of water (density = 1gcm-3) is

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| a) 9.0 X 10-23 cm3 | b) 6.023 X 10-23 cm3 | c) 3.0 X 10-23 cm3 | d) 5.5 X 10-23 cm3 |

1. An element, X has the following isotope composition:

200X : 90%, 199X : 8.0%, 202X : 2.0%

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

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| a) 201 u | b) 202 u | c) 199 u | d) 200 u |

1. Percentage of Se in peroxidase anhydrase enzyme is 0.5% by weight (at. Weight = 78.4), then minimum molecular weight of peroxidase anhydrase enzyme is

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| a) 1.568 X 103 | b) 15.68 | c) 2.168 X 104 | d) 1.568 X 104 |

1. In the reaction, 4NH3 (g) + 5O2 (g) → 4NO (g) + 6H2O (l). When 1 mole of ammonia and 1 mole of O2 are made to react to completion, then

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| a) 1.0 mole of H2O is produced | b) 1.0 mole of NO will be produced |
| c) all the oxygen will be consumed | d) all the ammonia will be consumed |

1. Haemoglobin contains 0.33% of iron by weight. The molecular weight of haemoglobin is approximately 67200 g. The number of iron atoms (at. weight of Fe = 56) present in one molecule of haemoglobin are

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| a) 1 | b) 6 | c) 4 | d) 2 |

1. 0.24 g of a volatile gas, upon vaporization, gives 45 mL vapour at NTP. What will be the vapour density of the substance? [Density of H2 = 0.089]

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| a) 95.93 | b) 59.93 | c) 95.39 | d) 5.993 |

1. Liquid benzene (C6H6) burns in oxygen according to the equation,

2C6H6 (l) + 15O2 (g) → 12CO2 (g) + 6H2O (g).

How many litres of O2 at STP are needed to complete the combustion of 39 g of liquid benzene? (Mol. weight of O2 = 32, C6H6 = 78)

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| a) 74 L | b) 11.2 L | c) 22.4 L | d) 84 L |

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

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| a) 0.0093 mole | b) 2.10 mole | c) 0.186 mole | d) 0.21 mole |

1. The molecular weight of O2 and SO2 are 32 and 64 respectively. At 15˚C and 150mmHg pressure, 1 L of O2 contains ʻNʼ molecules. The number of molecules in 2 L of SO2 under the same condition of temperature and pressure will be

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| a) N/2 | b) N | c) 2N | d) 4N |

**Answers**

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

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| 1. a |
| 2. b |
| 3. d |
| 4. c |
| 5. a |
| 6. a |
| 7. b |
| 8. d |
| 9. a |
| 10. b |
| 11. b |
| 12. c |
| 13. c |
| 14. d |
| 15. d |
| 16. c |
| 17. c |
| 18. b |
| 19. d |
| 20. a |
| 21. c |