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Questions:

I. ANSWER ALL THE QUESTIONS

1. An element X has the following isotopic Composition ^{200}X = 90%, ^{199}X = 8% and ^{202}X = 2%. The Weighted average atomic mass of the element X is closest to _____.
   (a) 201 u (b) 202 u (c) 199 u (d) 200 u
2. The equivalent mass of a trivalent metal element is 9 g eq^{-1} the molar mass of its anhydrous oxide is _____.
   (a) 102 g (b) 27 g (c) 270 g (d) 78 g
3. When 6.3 g of sodium bicarbonate is added to 30 g of the acetic acid solution, the residual solution is found to weigh 33 g. The number of moles of carbon dioxide released in the reaction is _____.
   (a) 3 (b) 0.75 (c) 0.075 (d) 0.3
4. When 22.4 litres of $H_2(g)$ is mixed with 11.2 litres of $Cl_2(g)$, each at 273 K at 1 atm the moles of HCl (g), formed is equal to _____.
   (a) 2 moles of HCl (g) (b) 0.5 moles of HCl (g) (c) 1.5 moles of HCl (g) (d) 1 moles of HCl (g)
5. Hot concentrated sulphuric acid is a moderately strong oxidizing agent. Which of the following reactions does not show oxidising behaviour ?
   (a) $Cu + 2H_2SO_4 \longrightarrow CuSO_4 + SO_2 + 2H_2O$ (b) $C + 2H_2 + SO_4 \longrightarrow CO_2 + 2SO_2 + 2H_2O$ (c) $BaCl_2 + H_2SO_4 \longrightarrow BaSO_4 + 2HCl$ (d) None of the above
6. Fe2 + $\longrightarrow Fe^{3+} + e^-$ is a _____ reaction.
   (a) redox (b) reduction (c) oxidation (d) decomposition
7. Which one of the following represents 180 g of water ?
   (a) 5 Moles of water (b) 90 moles of water (c) $\frac{6.022\times10^{23}}{180}$ molecules of water (d) 6.022×10^{24}molecules of water
8. Total number of electrons present in 1.7 g of ammonia is _____.
   (a) 6.022×10^{23} (b) $\frac{6.022\times10^{22}}{1.7}$ (c) $\frac{6.022\times10^{24}}{1.7}$ (d) $\frac{6.022\times10^{23}}{1.7}$
9. The oxidation number of Cr in $Cr_2O_7^{2-}$ _____ is
   (a) +6 (b) -6 (c) +7 (d) -7
10. The correct increasing order of the oxidation state of sulphur in the anions SO_4^{2-} , SO_3^{2-}, $S_2O_4^{2-}$, $S_2O_6^{2-}$ is _____.
    (a) $SO_3^{2-} < SO_4^{2-} < S_2O_4^{2-} < S_2O_6^{2-}$ (b) $S_4^{2-} < SO_4^{2-} < S_2O_6^{2-} < SO_3^{2-}$ (c) $S_2O_4^{2-} < SO_3^{2-} < S_2O_6^{2-} < SO_4^{2-}$ (d) $S_2O_6^{2-} < SO_4^{2-} < SO_4^{2-} < SO_3^{2-}$
11. If Avogadro number were changed from 6.022 x 10^{23} to 6.022 x 10^{20}, this would change _____.
    (a) the ratio of chemical species to each other in a balanced equation (b) the ratio of elements to each other in a compound (c) the definition of mass in units of grams
    (d) the mass of one mole of carbon
12. What is the mass of precipitate formed when 50 ml of 8.5 % solution of $AgNO_3$ is mixed with 100 ml of 1.865 % potassium chloride solution ?
    (a) 3.59 g (b) 7g (c) 14 g (d) 28 g
13. The mass of a gas that occupies a volume of 612.5 ml at room temperature and pressure (25^0 c and 1 atm pressure) is 1.1g. The molar mass of the gas is _____.
    (a) 66.25 g mol^{-1} (b) 44 g mol^{-1} (c) 24.5 g mol^{-1} (d) 662.5 g mol^{-1}
14. Which of the following compound(s) has /have a percentage of carbon same as that in ethylene (C_2H_4)?
    (a) propene (b) ethyne (c) benzene (d) ethane
15. Which one of the following is used as a standard for atomic mass?
    (a) $_6C^{12}$ (b) $_7C^{12}$ (c) $_6C^{13}$ (d) $_6C^{14}$

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