Date Planned : __ / __ / __	Daily Tutorial Sheet - 7	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level - 2	Exact Duration :_____

86. Suppose elements X and Y combine to form two compounds XY_2 and X_3Y_2 when 0.1 mole of former weigh 10 g while 0.05 mole of the latter weighs 9 g. What are the atomic weights of X and Y.

(A) 40, 30 **(B)** 60, 40 **(C)** 20, 30 **(D)** 30, 20

87. Which statement is false for the balanced equation given below ?

$$CS_2 + 3O_2 \longrightarrow 2SO_2 + CO_2$$

(A) One mole of CS_2 will produce one mole of CO_2

(B) The reaction of 16 g of oxygen produce 7.33 g of CO_2

(C) The reaction of one mole of O_2 will produce 2/3 mole of SO_2

(D) Six molecules of oxygen requires three molecules of CS_2

88. The hourly energy requirement of an astronaut can be satisfied by the amount of energy released when 34 g of sucrose is burnt in his body. How many grams of oxygen would be needed to be carried in space capsule to meet his requirement for one day?

(A) 916.2 gm **(B)** 91.62 gm **(C)** 8.162 gm **(D)** 9.162 gm

89. 5 mL of N-HCl, 20 mL of N/2 H_2SO_4 and 30 mL of N/3 HNO_3 are mixed together and the volume is made to 1 L. The normality of the resulting solution is

(A) N/5 **(B)** N/10 **(C)** N/20 **(D)** N/40

90. 8 g of sulphur is burnt to form SO_2 which is oxidized by Cl_2 water. The solution is treated with $BaCl_2$ Solution: The amount of $BaSO_4$ precipitated is

(A) 1 mole **(B)** 0.5 mole **(C)** 0.24 mole **(D)** 0.25 mole

91. 10 g of a sample of mixture of $CaCl_2$ and NaCl is treated to precipitate all the calcium as $CaCO_3$. This $CaCO_3$ is heated to convert all the Ca to CaO and the final mass of CaO is 1.62 g. The percent by mass of $CaCl_2$ in the original mixture is

(A) 32.1% **(B)** 16.2% **(C)** 21.8% **(D)** 11.0%

92. 13.4 g of a sample of unstable hydrated salt $Na_2SO_4 \cdot XH_2O$ was found to contain 6.3 g of H_2O. The number of molecules of water of crystallization is

(A) 5 **(B)** 7 **(C)** 2 **(D)** 10

93. A mineral consists of an equimolar mixture of the carbonates of two bivalent metals. One metal is present to the extent of 15.0 % by weight, 3.0 g of the mineral on heating lost 1.10 g of CO_2. The percent by weight of other metal is

(A) 65 **(B)** 25 **(C)** 75 **(D)** 35

94. One litre of 0.15 M HCl and one litre of 0.3 M HCl is given. What is the maximum volume of 0.2 M HCl which one can make from these two solutions. No water is added.

(A) 1.2 L **(B)** 1.5 L **(C)** 1.3 L **(D)** 1.4 L

95. For the reaction, $2Fe(NO_3)_3 + 3Na_2CO_3 \longrightarrow Fe_2(CO_3)_3 + 6NaNO_3$ initally 2.5 mole of $Fe(NO_3)_2$ and 3.6 mole of Na_2CO_3 are taken. If 6.3 mole of $NaNO_3$ is obtained then % yield of given reaction is :

(A) 50 **(B)** 84 **(C)** 87.5 **(D)** 100