Date Planned : __ / __ / __	Daily Tutorial Sheet - 14	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level - 3	Exact Duration :_____

153. Maximum percentage yield of oleum in terms of mass of H_2SO_4 obtained by 100 gram of oleum is :

(A) 120% **(B)** 122.4% **(C)** 125% **(D)** 137.5%

154. The empirical formula of a compound is CH_2O. If 0.0833 moles of the compound contains 1.0 g of hydrogen, its molecular formula should be :

(A) $C_6H_{12}O_6$ **(B)** $C_5H_{10}O_5$ **(C)** $C_4H_8O_4$ **(D)** $C_3H_6O_3$

155. A hydrocarbon C_nH_{2n} yields C_nH_{2n+2} by reduction. In this process, the molar mass of the compound is raised by 2.38%. The value of *n* is:

(A) 8 **(B)** 4 **(C)** 6 **(D)** 5

156. A certain vitamin extracted from plant sources has carbon and hydrogen in 8 : 1 mass ratio. The percentage of oxygen is nearly 7.3. The compound gave no test for nitrogen or sulphur or any other element. What should be the empirical formula of the compound?

(A) $C_{30}H_{45}O_2$ **(B)** $C_{15}H_{23}O$ **(C)** $C_{29}H_{45}O_3$ **(D)** $C_{10}H_{15}O$

157. An unknown oxide of manganese is reacted with carbon to form manganese metal and CO_2. Exactly 31.6 g of the oxide, Mn_xO_y, yielded 13.2 g of CO_2. The simplest formula of the oxide is :

(MW of Mn = 55 g mol^{-1})

(A) MnO **(B)** MnO_2 **(C)** Mn_2O_3 **(D)** Mn_2O_7

158. Assume that the atomic mass of oxygen is 7, A sample of 11 g of an oxide of uranium contains 10 g of uranium. Which of the following formula for the oxide is compatible with the data?

(A) Uranium oxide is UO and the atomic mass of U is 70.

(B) Uranium oxide is U_3O_8 and the atomic mass of U is 240.

(C) Uranium oxide is UO_2 and the atomic mass of U is 105.

(D) Uranium oxide is U_2O_3 and the atomic mass of U is 105.