

# Basic Concept of Chemistry

- Q.1 A 20 cm long cylinder of radius 5 cm is filled up with  $NH_3$  gas at STP Calculate the number of moles of  $NH_3$  in the cylinder.
- Q.2 20 mL of CO was mixed with 50 mL of oxygen and the mixture was exploded. On cooling. The resulting mixture was shaken with KOH. Find the volume of the gas that is left.
- Q.3 For the following reaction , the mass of water produced from 445 g of  $C_{57}H_{110}O_6$  is :  
 $2C_{57}H_{110}O_6(s) + 163_2(g) \rightarrow 114CO_2(g) + 110 H_2O (l)$   
(a) 490 g (b) 495 g  
(c) 445 g (d) 890 g
- Q.4 For a reaction  
 $N_2(g) + 3H_2(g) \rightarrow 2NH_3(g)$  identify dihydrogen ( $H_2$ ) as a limiting reagent in the following reaction mixtures.  
(a) 56 g of  $N_2$  + 10 g of  $H_2$   
(b) 35 g of  $N_2$  + 8 g of  $H_2$   
(c) 14 g of  $N_2$  + 4 g of  $H_2$   
(d) 28 g of  $N_2$  + 6 g of  $H_2$
- Q.5 Calculate the amount of oxygen required to produce enough CO on reaction with C which can reduce 1.6 kg  $Fe_2O_3$ .
- Q.6 Calculate the mass of  $KClO_3$  that will liberate 11.2 litre  $O_2$  at NTP.  
(a) 38 g (b) 46.4 g  
(c) 40.8 g (d) 52.4 g

