

119. A volume of 200 ml of oxygen is added to 100 ml of a mixture containing  $\text{CS}_2$  vapour and  $\text{CO}$ , and the total mixture is burnt. After combustion, the volume of the entire mixture is 245 ml. Calculate the volume of the oxygen that remains
- (a) 67.5 ml  
 (b) 125.0 ml  
 (c) 200.0 ml  
 (d) 100.0 ml
120. A volume of 10 ml hydrogen requires 25 ml air for complete combustion. The volume per cent of  $\text{N}_2$  in air is
- (a) 20%  
 (b) 80%  
 (c) 79%  
 (d) 5%
121. A volume of 10 ml of gaseous  $\text{C}_4\text{H}_x$  exactly requires 55 ml  $\text{O}_2$  for complete combustion. The value of 'x' is
- (a) 4  
 (b) 6  
 (c) 8  
 (d) 10
122. When 500 ml  $\text{CO}_2$  gas is passed through red hot charcoal, the volume becomes 700 ml. The volume of  $\text{CO}_2$  converted into  $\text{CO}$  is
- (a) 200 ml  
 (b) 300 ml  
 (c) 350 ml  
 (d) 500 ml
123. The percentage by volume of  $\text{C}_3\text{H}_8$  in a mixture of  $\text{C}_3\text{H}_8$ ,  $\text{CH}_4$  and  $\text{CO}$  is 36.5. The volume of  $\text{CO}_2$  produced when 100 ml of the mixture is burnt in excess of  $\text{O}_2$ , is
- (a) 153 ml  
 (b) 173 ml  
 (c) 193 ml  
 (d) 213 ml
124. A volume of 1 ml of a gaseous aliphatic compound  $\text{C}_n\text{H}_{3n}\text{O}_m$  is completely burnt in an excess of oxygen. The contraction in volume (in ml) is
- (a)  $\left(1 + \frac{1}{2}n - \frac{3}{4}m\right)$   
 (b)  $\left(1 + \frac{3}{4}n - \frac{1}{4}m\right)$   
 (c)  $\left(1 - \frac{1}{2}n - \frac{3}{4}m\right)$   
 (d)  $\left(1 + \frac{3}{4}n - \frac{1}{2}m\right)$
125. The explosion of a mixture consisting of one volume of a gas being studied and one volume of  $\text{H}_2$  yielded one volume water vapour and one volume of  $\text{N}_2$ . The formula of gas being studied, is
- (a)  $\text{NO}$   
 (b)  $\text{NO}_2$   
 (c)  $\text{N}_2\text{O}$   
 (d)  $\text{N}_2\text{O}_3$
126. A gaseous alkane is exploded with oxygen. The volume of  $\text{O}_2$  for complete combustion to the volume of  $\text{CO}_2$  formed is in 7:4 ratio. The molecular formula of alkane is
- (a)  $\text{CH}_4$   
 (b)  $\text{C}_3\text{H}_8$   
 (c)  $\text{C}_2\text{H}_6$   
 (d)  $\text{C}_4\text{H}_{10}$
127. A volume  $V$  of a gaseous hydrocarbon was exploded with an excess of oxygen. The observed contraction was  $2.5V$ , and on treatment with potash, there was a further contraction of  $2V$ . What is the molecular formula of the hydrocarbon?
- (a)  $\text{C}_2\text{H}_6$   
 (b)  $\text{C}_3\text{H}_8$   
 (c)  $\text{C}_4\text{H}_{12}$   
 (d)  $\text{C}_2\text{H}_4$
128. A volume of 10 ml chlorine gas combines with 25 ml of oxygen gas to form 10 ml of a gaseous compound. If all the volumes are measured at the same pressure and temperature, what is the molecular formula of compound formed?
- (a)  $\text{Cl}_2\text{O}$   
 (b)  $\text{Cl}_2\text{O}_7$   
 (c)  $\text{ClO}_2$   
 (d)  $\text{Cl}_2\text{O}_5$