

- Q.05 The  $p$ - $V$  diagram of two different gases (as shown) at constant temperature  $T$ . State which gas has a larger mass.

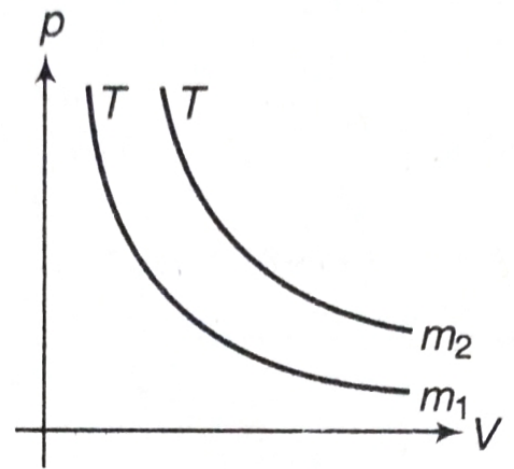


Fig. 20.19

**Solution**

$$pV = nRT = \frac{m}{M} RT$$

$$\therefore m = (pV) \left( \frac{M}{RT} \right) \text{ or } m \propto pV \text{ if}$$

From the graph, we can see that  $p_2V_2 > p_1V_1$  (for same  $p$ )  
 $m_2 > m_1$