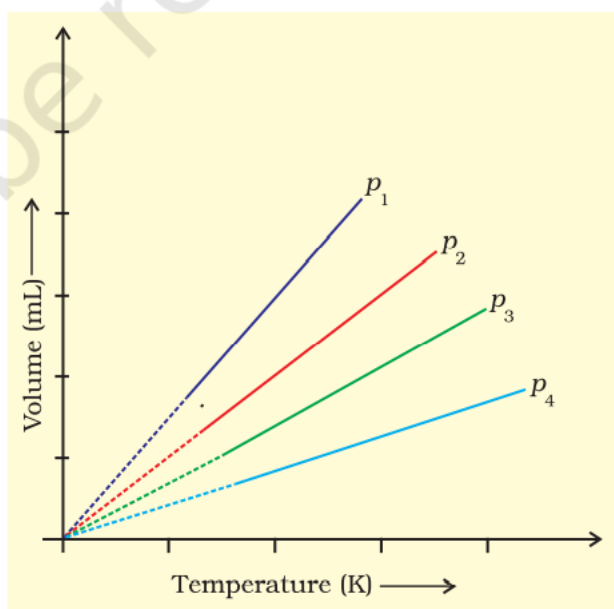


**Question 0**

3. A plot of volume ( $V$ ) versus temperature ( $T$ ) for a gas at constant pressure is a straight line passing through the origin. The plots at different values of pressure are shown in Fig. 5.1. Which of the following order of pressure is correct for this gas?

- (i)  $p_1 > p_2 > p_3 > p_4$
- (ii)  $p_1 = p_2 = p_3 = p_4$
- (iii)  $p_1 < p_2 < p_3 < p_4$
- (iv)  $p_1 < p_2 = p_3 < p_4$



**Fig. 5.1**

**Answer:**

With an increase pressure, the lines shift inwards (towards  $x$ -axis). This is because of a decrease in the value of  $k$  with an increase in pressure.

- (iii)  $p_1 < p_2 < p_3 < p_4$