

Previous year JEE questions 1

What is the increase in volume, when the temperature of 600 ml of air increases from 27°C to 47°C under constant pressure?

Using $T_2V_1 = T_1V_2$

$V_1 = 600\text{ml}$, $T_1 = 27^\circ\text{C} = 300\text{K}$

$V_2 = ?$ $T_2 = 320\text{K}$

$320 \cdot 600 = 300V_2$

$\Rightarrow V_2 = 640\text{ml}$

Change in volume = $640 - 600$

= 40ml