

$$\text{efficiency} = \frac{\text{work done}}{\text{Thermal energy at higher temperature}}$$

$$\Rightarrow \frac{20}{100} = \frac{25\text{kJ}}{\text{Thermal energy at higher temperature}}$$

$$\Rightarrow \text{Thermal energy at higher temperature} = \frac{25\text{kJ}}{0.2} = 125\text{kJ}$$

$$\begin{aligned} \text{Thermal energy at lower temperature} \\ = \text{Thermal energy at higher temperature} - \text{work} \end{aligned}$$

$$\text{So, Thermal energy at lower temperature} = 125\text{kJ} - 25\text{kJ} = \mathbf{100\text{kJ}}$$