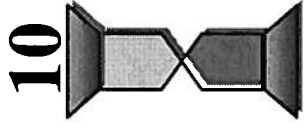
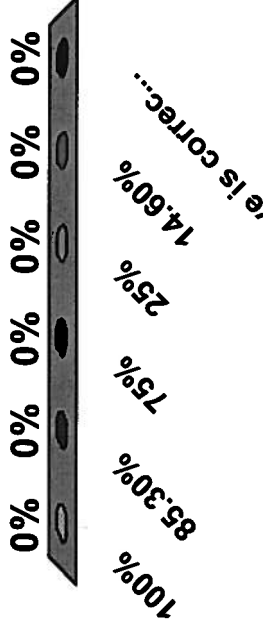


A heat engine operates between 2127°C and 327°C. If it were an idealized Carnot engine, its efficiency would be

- 1. 100%
- 2. 85.3%
- 3. 75%
- 4. 25%
- 5. 14.6%



- 6. None above is correct within 10%



The correct answer is (b): 75%, as follows

- $\eta_{\text{CARNOT}} = 1 - (T_H/T_C)$;
- Here $T_H = 2127 + 273 = 2400$ K, and $T_C = 327 + 273 = 600$ K.

(One must always use the Absolute Kelvin scale of Temperatures in applying Carnot's efficiency.)

- Therefore, $\eta_{\text{CARNOT}} = (1 - 600/2400) = (1 - 0.25) = 0.75 = 75\%$