

- 17** In many old-style filament lamps, as much as 93 J of energy is emitted as thermal energy for every 7 J of energy emitted as light.

What is the efficiency of the lamp, as the percentage of electrical energy converted to light energy?

- A** 7% **B** 8% **C** 92% **D** 93%

- 18** An electric railway locomotive has a maximum mechanical output power of 4.0 MW. Electrical power is delivered at 25 kV from overhead wires. The overall efficiency of the locomotive in converting electrical power to mechanical power is 80%.

What is the current from the overhead wires when the locomotive is operating at its maximum power?

- A** 130 A **B** 160 A **C** 200 A **D** 250 A

- 19** Which statement defines the density of a substance?

- A** the force per unit area acting on the substance
B the increase in length per unit length of the substance
C the mass per unit volume of the substance
D the work done per unit time by the substance

- 20** The table summarises some properties of evaporation.

Which row of the table is correct?

	involves a change in state from liquid to vapour	occurs at a fixed temperature	involves a reduction in the average kinetic energy of the remaining atoms
A	true	true	true
B	true	false	true
C	true	false	false
D	false	true	false