

- 20** A railway engine accelerates a train of total mass 800 tonnes (1 tonne = 1000 kg) from rest to a speed of  $50 \text{ m s}^{-1}$ .

How much work must be done on the train to reach this speed?

- A**  $1.0 \times 10^6 \text{ J}$       **B**  $2.0 \times 10^6 \text{ J}$       **C**  $1.0 \times 10^9 \text{ J}$       **D**  $2.0 \times 10^9 \text{ J}$

- 21** Water from a reservoir is fed to the turbine of a hydroelectric system at a rate of  $500 \text{ kg s}^{-1}$ . The