

- 12** A piece of metal of mass  $m$ , specific heat capacity  $c$  and temperature  $20\text{ }^{\circ}\text{C}$  is placed into a liquid of temperature  $100\text{ }^{\circ}\text{C}$ . The liquid, which is in a well-insulated container, has mass  $3m$  and specific heat capacity  $2.5c$ .

What is the temperature of the liquid when thermal equilibrium is reached?

- A**  $56\text{ }^{\circ}\text{C}$                       **B**  $60\text{ }^{\circ}\text{C}$                       **C**  $85\text{ }^{\circ}\text{C}$                       **D**  $91\text{ }^{\circ}\text{C}$

- 13** The graph shows the variation with time  $t$  of temperature change  $\Delta\theta$  for  $1\text{ kg}$  of a substance