

Multiple Choice Answers

Q13: C

Q15: C

4(a)	energy transferred per unit mass per unit temperature change
	(thermal) energy (transferred) per unit temperature change
4(b)(i)	$(m =) 2.2 \text{ kg}$
	$m = \rho V$ in any form OR 910×0.0024
4(b)(ii)	$7.0 \times 10^5 \text{ J}$ OR $700\,000 \text{ J}$
	$c = \Delta E / \{ m \Delta \theta \}$ OR $(\Delta E =) mc \Delta \theta$ OR $2.2 \times 2000 \times 160$ OR $2.184 \times 2000 \times 160$
4(b)(iii)	1700 W
	$(P =) E / t$ OR $700\,000 / 7 \times 60$ OR $704\,000 / 7 \times 60$ OR $698\,880 / 7 \times 60$

4(a)	delocalised / free / mobile electrons
	electrons move through metal OR electrons collide with distant particles OR electrons carry energy through the metal
	lattice vibrations transfer energy to neighbouring particles OR particles vibrate and cause nearby / adjacent particles to vibrate OR vibrating particles collide with particles transferring energy
4(b)(i)	(attractive) forces (between particles are much) greater in liquids (than in gases)
	particles in gases are (much) further apart (than in liquids)
4(b)(ii)	occurs at a fixed temperature
	takes place throughout the liquid
4(c)	$3.93 \text{ J / (g } ^\circ\text{C)}$ OR $3930 \text{ J / (kg } ^\circ\text{C)}$
	$\rho = m / V$ OR $(m =) \rho V$ OR 1.03×200 OR 206 SEEN
	$c = E / m \Delta \theta$ OR $(c =) E / m \Delta \theta$ OR $60\,700 / (206 \times 75)$ OR $60700 / (1.03 \times 200 \times 75)$
	$(m =) 206 \text{ (g)}$ OR $(\Delta \theta =) 75 \text{ (} ^\circ\text{C)}$

3(a)	<i>Any two from:</i> (Amount of water in the pool decreases) as water evaporates / becomes water vapour / gas - The (more) energetic molecules escape OR fast(er) molecules escape OR molecules with more (kinetic) energy escape - From the <u>surface</u> of the water		
3(b)	lower temperatures / cold(er) day	OR	less windy weather
	produces smaller pool more slowly because rate of evaporation decreases with decreasing temperature	OR	produces smaller pool more slowly as a draught over surface removes water vapour enabling faster rate of evaporation
3(c)	<i>Any three from:</i> (thermal) energy in the skin / body transferred to (molecules of) sweat - These molecules (have enough KE to) escape from the skin / become water vapour - Leaving behind molecules with lower energy - Which leaves the skin / body at a lower temperature		