

Question number	Answer	Notes	Marks
9 (a) (i)	(gravitational potential) energy = $m \times g \times h$ ;	ACCEPT: $E = \text{mass} \times \text{gravity} \times \text{height}$ REJECT: $E = W \times h$	1
(ii)	Substitution $18 \times 10 \times 5$ ; Calculation $900 \text{ (J)}$ ;	If (i) is blank, but correct equation written in (ii), then credit. ACCEPT: $882 \text{ (J)}$	2
(iii)	equal / the same / =	ACCEPT: equivalent REJECT: proportional IGNORE: $900 \text{ J}$	1
(b)	Up to five marks in all – up to two for each mechanism  Conduction air / gas is a poor conductor / insulator ; air molecules are (relatively) far apart ; fibres are insulating ;  Convection air / gas (between fibres) cannot move ; thus no / reduced convection <u>currents</u> ;  Radiation aluminium foil / shiny surface is a poor radiator ; thermal energy / heat / radiation is reflected (back inside) ; aluminium foil / shiny surface is poor absorber ;	IGNORE: conductor of electricity ACCEPT: particles cannot transfer energy as they don't collide often          ACCEPT: emitter	5

**Total 9 marks**