

2IB Phys. Training April 2008, HL + SL, Answers

M00 SL P1, 3: A

M00 SL P1, 4: D

M00 SL P1, 5: B

M00 SL P1, 6: D

M00 SL P1, 7: B

M00 SL P1, 8: B

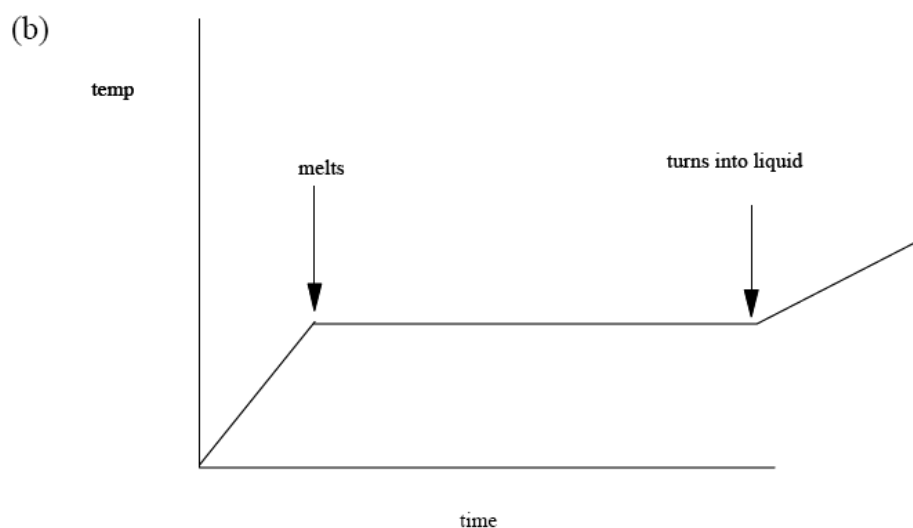
M00 SL P1, 9: A

M00 SL P1, 10: C

M00 SL P2, A3

A3. (a) (i) Energy supplied = $1.5 \times 10^3 \times \Delta t = 1.5 \times 10^3 \times 12$
 $= ms\Delta\theta$
correct substitution to give $120 \text{ J kg}^{-1} \text{ }^\circ\text{C}^{-1}$

(ii) energy supplied = $mL = 1.5 \times 10^3 \times 180$
correct substitution to give 540 kJ kg^{-1}



region of constant temp
melting point, liquefaction point

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M00 HL P1, 8: D

M00 HL P1, 9: B

M00 HL P1, 16: A

M00 HL P1, 17: A

M00 HL P1, 18: C

M00 HL P2, B1 part 2

B1. Part 2

(a) (i) $B \rightarrow C,$
 $C \rightarrow D$

(ii) $A \rightarrow B,$
 $D \rightarrow A$

(b) From the area bounded by the graph

(c) $Eff = \frac{T_{\text{hot}} - T_{\text{cold}}}{T_{\text{hot}}}$
 $= 50 \%$

(d) (i) increase in energy of the molecules of air in the ball and friction at the point of contact increases molecular motion and thereby increasing disorder (entropy).

(ii) air molecules from inside balloon mix with outside air molecules increasing the overall disorder (entropy).