Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Mark Schemes

Q1.

(a) any **two** from:

- water evaporates
  accept steam / water vapour for water molecules
  accept water turns to steam
- water molecules / particles go into the air
- mirror (surface) is cooler than (damp) air
  accept the mirror / surface / glass is cold
- water molecules / particles that hit the mirror lose energy
  accept water molecules / particles that hit the mirror cool down
- cooler air cannot hold as many water molecules / particles

2

(causes) condensation (on the mirror)
accept steam changes back to water (on the mirror)

or
particles move closer together

1

(b) mirror (surface) is warm
mirror is heated is insufficient

1

(rate of) condensation reduced
accept no condensation (happens)

1

[5]

Q2.

(a) (i) 5(.0)

1

(ii) 35 **or** their (a)(i) × 7 correctly calculated
*allow **1** mark for correct substitution, ie 5 **or** their (a)(i) × 7 provided no subsequent step shown*

2

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(iii) 525(p)
or
(£) 5.25
or
their (a)(ii) × 15 correctly calculated
if unit p or £ given they must be consistent with the numerical answer

1

(iv) decreases

1

temperature difference (between inside and outside) decreases
accept gradient (of line) decreases
*do **not** accept temperature (inside) decreases*
*do **not** accept graph goes down*

1

(b) air (bubbles are) trapped (in the foam)
*do **not** accept air traps heat*
foam has air pockets is insufficient

1

(and so the) air cannot circulate / move / form convection current
air is a good insulator is insufficient
no convection current is insufficient
answers in terms of warm air from the room being trapped are incorrect and score no marks

1

[8]

Q3.

(a) conduction

1

(b) (i) any **one** from:

- starting temperature (of cold water)
  temperature is insufficient
- pipe length
  accept size of pipe
- pipe diameter
- pipe (wall) thickness
- volume of cold water
  accept amount for volume
- temperature of hot water (in)
- time

1

(ii) copper

1

greatest temperature change

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only scores if copper chosen
accept heat for temperature
accept heated water the fastest
accept it was hottest (after 10 minutes)
accept it is the best / a good conductor

1

(c) the pipe has a larger (surface) area
accept pipe is longer

1

(so) hot / dirty water (inside pipe) is in contact with cold / clean water (outside pipe) for longer

1

[6]

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