

Name of the Student: _____

Max. Marks : 24 Marks

Time : 24 Minutes

Mark Schemes

Q1.

- (i) conduction, convection
answer can be in either order
1
- (ii) traps (lots of) air
*do **not** accept heat is trapped in the fibre*
1
- air is a (good) insulator **or** poor conductor
1

[3]

Q2.

- (a) (i) any **one** from:
water to the mug
water to the air
mug to the air
mug to the table
***both** required*
direction of transfer must be correct
1
- (ii) when temperatures are the same
accept a specific example eg when the temperature of the water and mug are the same
accept radiant heat transfer will never stop
1
- (b) wood
1
- (c) (i) conduction
accept convection if not given as 3rd answer
1
- insulator
1
- (ii) any **one** from:
*do **not** accept any rebuilding of house*
double glazing

loft insulation
accept roof for loft

1

carpets

(cavity) wall insulation
*do **not** accept closing doors and windows*

draft excluders

foil behind radiators
accept blocking chimney

paint inside walls white

[6]

Q3.

- (a) (i) (insulate it) with **fibre** glass **or** foam
or felt **or** polystyrene beads **or**
rockwool **or** (aluminium) foil

*an example must be included
do not credit loft insulation*

1

- (ii) fill the cavity with fibre glass **or** foam
or mineral wool **or** polystyrene **or**
named liner inside wall **or** making
walls thicker

*an example must be included
do not credit cavity wall insulation*

1

- (iii) double glaze **or** draw the curtains **or**
blinds **or** thicker glass **or** secondary
glazing described

do not credit fit smaller windows

1

- (iv) put in draught excluder (or described)
or strip **or** description of filling gaps
or seal gaps **or** double glazed doors
or build porch **or** curtains inside door
or mat under door

*do not credit just carpet
accept buy new doors
accept premise that gap is between frame and wall as well as between
frame and door*

1

- (b) windy **or** stormy **or** wet **or** snow **or**
rain **or** sleet **or** hail **or** fog **or** mist

do not credit frosty

1

[5]

Q4.

- (a) (i) conduction 1
- convection
they may be in either order 1
- (ii) radiation 1
- (iii) evaporation 1
- convection
they may be in either order 1
- (iv) convection 1
- (v) conduction 1
- (b) in the middle above halfway up (above line joining top of spacers)
below the surface of the liquid 1
- (c) by particles vibrating more
particles shake more or move more
do not credit they start vibrating 1
- they pass on the energy or vibrations
do not credit heat 1

[10]