Name of the Student:_____
Max. Marks : 18 Marks **Time : 18 Minutes**

Mark Schemes

Q1.

(a) four calculations correctly shown

200 × 10 – 1800 = £200
100 × 10 – 2400 = –£1400
50 × 10 – 600 = –£100
20 × 10 – 75 = 125

*accept four final answers only **or** obvious rejection of solar water heater and underfloor heating, with other two calculations completed*
*any 1 complete calculation correctly shown **or** showing each saving × 10 of all four calculations = 1 mark*
*answers in terms of savings as a percentage of installation cost **may** score savings mark only*

2

hot water boiler

correct answers only

1

(b) less electricity / energy to be generated / needed from power stations

accept less demand

1

reduction in (fossil) fuels being burnt

accept correctly named fuel

accept answer in terms of:
fewer light bulbs required because they last longer (1 mark)
less energy used / fuels burnt in production / transport etc. (1 mark)

ignore reference to CO_2 or global warming

ignore reference to conservation of energy

1

[5]

Q2.

(a) (i) £190

nb mention idea of cost per J in £ will come to an approx figure full credit given

*allow **1** mark for showing that the energy loss through the roof is ¼ of the total energy loss ie 150 / 600*

2

(ii) £142.50

allow ecf 50 % of their (a)(i) × 1.5 ie their (a)(i) × 0.75

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1

(b) transferred to surroundings / atmosphere

or becomes spread out

1

[4]

Q3.

(a) (i) £150

gets 2

Else 1000 – (250 + 350 + 100 + 150) or 1000 – 850

gets 1

2

(ii) (Named) floor covering
OR Insulation under floor

for 1 mark

1

(b) (i) Draught proof doors or fibre glass in loft or in cavity
For draught proofing

gains 1 mark

Very low cost/easy to install
Repays for itself quickly/cost recuperated quickly
Reasonable energy saving

any 2 for 1 mark each

For loft insulation

Second lowest installation cost/easy to install
Reasonable large energy savings for this cost
Reasonable payback time

gains 1 mark

For foam filled cavity
Biggest energy/cash saving
Cost effective

any 2 for 1 mark each

3

(ii) **Double glazing**

gains 1 mark

Costs most
Saves least energy
Least cost effective

any 2 for 1 mark each

3

[9]

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