Infra red radiation

Mark scheme

1. (a) (i) 25 (%) 1
*do **not** accept ¼*

(ii) increases 1

(b) tick (✓) in top and bottom box 1
both required

(c) SHINY surfaces are good reflectors of infra-red radiation
accept white for shiny

or black surfaces are POOR reflectors of infra-red radiation
accept bad for poor
accept insertion of 'not' before 'good' in statement

or black surfaces are good EMITTERS of infra-red radiation

or black surfaces are good ABSORBERS of infra red radiation 1

[4]

2. silver is a (good) reflector of heat (radiation) **or** silver reflects the heat (radiation) 1
fact
heat = infra red
ignore references to light
accept shiny for silver
good radiator negates the mark
ignore references to good conductor
*do **not** accept bounce back*

less heat is lost through the board **or** more heat is retained by the shirt 1
explanation
accept both sides of shirt heated
*reflects heat back up gets **1** mark only*
ignore mention of friction

[2]

3. (i) radiation **or** infra red 1
*do **not** accept rays*
*do **not** accept waves*
accept electromagnetic waves

(ii) good absorber (of heat) to absorb heat (**or** infrared) 1
*do **not** accept 'attract' **or** 'capture' **or** soak*

(iv) to reflect (back into the panel) heat **or** infrared **or** Sun's energy 1
*do **not** accept 'bouncing'*
*do **not** accept reflect Sun*
*do **not** accept reflect sunlight **or** sun's rays*

radiated **or** given out by the (black) pipe 1
accept back to pipe
accept reduce heat loss for 1 mark
accept reduce heat loss by radiation for 2 marks
accept stop heat loss by radiation for I mark

[4]