

Name of the Student: _____

Max. Marks : 20 Marks

Time : 20 Minutes

Mark Schemes

Q1.

(a) increased 1

(b) (count) how many waves pass a point 1

in one second
this is dependent on the first mark point being awarded 1

or

(count) number of waves that pass a point in a given time
allow a specific time for a given time

or

(count) number of waves that are produced in a given time (1)

and divide by that time in seconds
this is dependent on the first mark point being awarded
allow an answer in terms of measuring the frequency of the vibrating bar

(c) $\text{period} = \frac{1}{5}$ 1

period = 0.2 1

seconds / s 1

[6]

Q2.

(a) glass vase 1

(b) transmit 1

(c) the T-shirt reflects all wavelengths / colours of light (equally)
allow T-shirt reflects (white / all) light 1

- (d) changes from red to black
it appears black
it is darker is insufficient 1

as the cap absorbs (all) the (blue) light
or
 as the cap does not reflect the (blue) light 1

- (e) C — distance
 D — the
 I — time
all 3 lines correct
allow 1 mark for 1 line correct
if more than one line drawn from a variable all of those lines
do not score 2

- (f) the (infrared) heater
allow infrared (radiation)
*do **not** accept answers where burning yourself is given as*
the hazard 1

- (g) answer must be a comparison, e.g. the matt / black surface is the better absorber (of infrared radiation)
matt black is a good absorber is insufficient 1
[9]

Q3.

- (a) C 1
- (b) radio waves have a longer wavelength than ultraviolet 1
- (c) (risk of) skin cancer
cancer is insufficient
or
 (prematurely) ageing skin
skin damage is insufficient
ignore kills skin cells 1
- (d) risk is higher (for X-ray of uds than X-ray of chest)
 by a factor of 50
or
 risk calculated for each type of X-ray
 chest X-ray = 1:200 000 (1)
 uds = 1:4000 (1) 1

[5]