

Name of the Student: _____

Max. Marks : 18 Marks

Time : 18 Minutes

Mark Schemes

Q1.

(a) any **one** from:

- (visible) light
- UV / ultra violet
- X-ray
- gamma / γ -ray

1

(b) less than

1

less than

1

the same as

1

[4]

Q2.

(a) electromagnetic

accept e.m.

1

(b) (i) 2.2 (arbitrary units)

allow an answer between 2.1 and 2.3

1

(ii) the thicker the tissue the lower the intensity

accept more intensity is needed to pass through thicker tissue

1

the relationship is not linear

accept the line is not straight

allow for 1 mark

it still goes through with thicker tissue

or

intensity does not reach zero

or

at 5 cm X rays still pass through

1

(iii) Both variables are continuous

1

- (c) (they are) absorbed
accept (they are) stopped

1

- (d) With a charge-coupled device (CCD).

1

- (e) (i) X-rays are ionising

1

- (ii) stand behind a (protective) screen
accept leave the room
accept wear a lead apron

1

[9]

Q3.

- (a) X marked in the centre of the sign



Check position by eye

1

- (b) concentrated

1

- (c) 0.5 (s)

allow 1 mark for correct substitution, ie

$$\frac{1}{2}$$

provided no subsequent step

2

- (d) make the cables longer
accept pendulum / sign for cables

1

[5]