Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic: Waves (High Demand Questions)

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Name of the Student:_____
Max. Marks : 21 Marks **Time : 21 Minutes**

Mark Schemes

Q1.

(a) different temperatures emit different intensities of infrared

1

which are represented (on the infrared camera) as different shades / colours

allow wavelength / frequency / amount for intensity throughout

1

(b) visible light

1

(c) both ionising radiation so some risk of cancer

1

the whole body is irradiated by gamma rays

1

when an X-ray is taken only part of the body is exposed

1

exposure time for gamma rays is longer

1

(d) $1.2 \times 10^{-13} = F \times 0.015$

1

$$F = \frac{1.2 \times 10^{-13}}{0.015}$$

allow a correct rearrangement using an incorrectly / not converted value of s

1

$F = 8.0 \times 10^{-12}$ N

allow 8×10^{-12} allow a correct calculation using an incorrectly / not converted value of s

1

(e) some of the energy of the electrons causes heating

1

(therefore) increasing the temperature

1

(so using tungsten) allows more electrons to be collided per second than using any other metal

allow (so using tungsten) enables more energy per second

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to be transferred than using any other metal

1

[13]

Q2.

(a) X-rays are absorbed by bone

1

but can pass through flesh

ignore skin

1

(b) taking lots of X-rays would give a large dose

1

which would increase the radiographer's risk

1

the screen absorbs some of the X-rays

allow screen reduces the risk/dose received by the radiographer

1

(c) electrical current / oscillations in the transmitter producing radio waves

1

radio waves are absorbed by the receiver inducing electrical current / oscillations in the receiver

1

at the same frequency

*if no other mark is awarded, allow **1** mark for radio waves transfer information/energy through the air*

1

[8]

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