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

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Name of the Student:_____
Max. Marks : 22 Marks **Time : 22 Minutes**

Mark Schemes

Q1.

(a) frequency

1

(b) echo(es)

1

(c) 340 (m/s)

*allow **1** mark for correct substitution ie 25 000 × 0.0136 provided no subsequent step*

or

*allow **1** mark for a correct calculation showing an incorrect value from conversion to hertz × 0.0136*

*an answer of 0.34 gains **1** mark*

2

(d) (a wave where the) oscillations are parallel to the direction of energy transfer

both marking points may appear as labels on a diagram

accept vibrations for oscillations
accept in same direction as for parallel to
allow direction of wave (motion) for direction of energy transfer

*allow **1** mark for a correct calculation showing an incorrect value from conversion to hertz × 0.0136*

1

causing (areas of) compression and rarefaction

accept correct description in terms of particles

mechanical wave is insufficient
needs a medium to travel through is insufficient

1

[6]

Q2.

(a) **use of infrared:**
remote controls
fibre optic (communications)

1

use of microwaves:
mobile/cell phones

accept mobiles

accept phone signals

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satellite (communications/TV)
wi-fi
Bluetooth

1

(b) any **two** from

- same speed
  or
  travel at the speed of light (in a vacuum)
- transverse
  accept a full description of a transverse wave
- transfer energy (from one place to another)
- can be reflected
- can be refracted
- can be diffracted
- can be absorbed / transmitted
- can travel through a vacuum/space
- can be polarised
  travels in straight lines is insufficient

2

[4]

Q3.

(a) B
must be in correct order

1

A

1

D

1

(b) (i) mass increases as refractive index increases
accept weight / density increases as refractive index increases

1

(ii) thinner
accept thin

1

heavier
accept heavy

1

(iii) maximum one advantage and one disadvantage of each design

water-filled
advantages:

- lenses are light
- wide range of focal length
- allows fine adjustment
- allows lenses to be altered independently.

1

disadvantages:

- unattractive
- lens might burst
- lens might leak

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- uncomfortable.

1

sliding lenses

advantages:

- hard-wearing
- look like conventional glasses
- easy to adjust
- allows lenses to be altered independently.

1

disadvantages:

- heavy
- might slide out of position
- might get dirt between the lenses.

1

(c) any two from:

the image is

- blurred
- coloured
- inverted
- diminished.

accept not focussed

1
1

[12]

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