Practice Question Set For GCSE
**Subject : Physics**
**Paper-2 Topic: GCSE Triple Science_Waves (HDQ)**

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**Name of the Student**:_____
**Max. Marks : 24 Marks** **Time : 24 Minutes**

Mark Schemes

## Q1.

(a) current

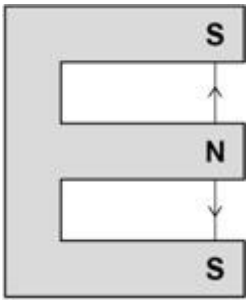
*allow charge flow*

**or**

potential difference

**1**

(b)




**1**

(c) an induced magnet is a material that becomes a magnet when it is placed in a magnetic field

*allow 'when close to another magnet' for 'when it is placed in a magnetic field'*

**or**

an induced magnet loses most / all of its magnetism (quickly) when removed from a magnetic field

*allow 'no magnets are nearby' for 'removed from a magnetic field'*

*'temporary magnet' alone is insufficient*

**1**

(d) motor effect

**1**

(e) 16 mA = 0.016 A

*allow* $1.6 \times 10^{-2}$ *(A)*

**1**

$0.013 = B \times 0.016 \times 6.5$

*allow correct substitution using incorrectly / not converted current*

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1

$$B = \frac{0.013}{0.016 \times 6.5}$$

*allow correct re-arrangement using incorrectly / not converted current*

1

$B$ = 0.125 (T)

*allow correct calculation using incorrectly / not converted current*

*allow 0.13 (T)*

1

(f) **Level 2**: Scientifically relevant features are identified; the way(s) in which they are similar / different is made clear and (where appropriate) the magnitude of the similarity / difference is noted.

3-4

**Level 1**: Relevant features are identified and differences noted.

1-2

**No relevant content**

0

**Indicative content:**

- for all three people, the minimum sound level that can be heard increases as frequency increases

**Age**

- the minimum sound level that can be heard increases with age
- between 2000 and 3000 Hz the minimum sound level that can be heard increases more in **B** compared to **C**
- **C** has very little variation in the minimum sound level that can be heard at all frequencies

**Working in a loud environment:**

- increases the minimum sound level that can be heard at all frequencies above 2000 Hz compared to working in a quiet environment
- the minimum sound level that can be heard increases more as frequency increases from 2000 to 4000 Hz compared to working in a quiet environment
- doesn't affect the minimum sound level that can be heard at 2000 Hz

to access **level 2** the answer must include at least **one** comparison for age **and one** comparison for working in a loud environment, using supporting data/information from the graph

**[12]**

## Q2.

(a) satellite

*allow moon*

1

(b) 12.5 cm = 0.125 m

1

$3 \times 10^8 = f \times 0.125$

*this mark may be awarded for an incorrectly / not converted*

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*value for wavelength*

**1**

$$f = \frac{3 \times 10^8}{0.125}$$

*this mark may be awarded for an incorrectly / not converted value for wavelength*

**1**

$f$ = 2 400 000 000 (Hz)

*this mark may be awarded for an incorrectly / not converted value for wavelength*

**1**

$f = 2.4 \times 10^9$ (Hz)

*this mark may be awarded for an incorrectly calculated value for frequency in standard form using the given data*

**1**

(c) gravitational force causes the Hubble Space Telescope to accelerate towards the Earth

**1**

this changes the direction of motion (but not the speed)

**1**

so changes the velocity of the Hubble Space Telescope

*if no other marks awarded, allow 1 mark for gravitational force maintains circular orbit*

**1**

(d) galaxy A has the greater red shift

**1**

(so) A is travelling (away from us) faster (than B)

**1**

(because) A is further away (from us than B)

*if no other marks awarded, allow 1 mark for galaxy A and galaxy B are moving away from us*

**1**

**[12]**

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