Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : 5_Light and Electromagnetic Spectrum

Name of the Student:_____
Max. Marks : 23 Marks **Time : 23 Minutes**

Mark Schemes

Q1.

	Answer	Acceptable answers	Mark
(i)	B seismic waves (1)		**(1)**
(ii)	(there is a) difference/change in density (1)	more/less/too dense (reach a) boundary (between different materials) Ignore 'the waves cannot travel through liquids/oil'	**(1)**

Q2.

Question Number	Answer	Additional guidance	Mark
(i)	evidence of use of scale on horizontal distance axis only (1) 12 (cm) (1)	may be seen on the diagram range 11.5 to 12.5 (cm) award full marks for the correct answer without working 6 (cm) or 30(cm) scores 1 mark (evidence of use)	**(2)**

Question Number	Answer	Additional guidance	Mark
(ii)	a description to include: moves up and down (1) at right angles / normal / perpendicular to (direction of) wave/travel (1)	independent marking points vertical (oscillations) not in the (direction of) wave / travel accept 'transverse wave' for 2nd MP	(2)

Q3.

	Answer	Acceptable answers	Mark
(b)(i)	A description including the following: • magnifies • the image • refracts the light	brings nearer / zooms in / looks closer / makes bigger / enlarges intermediate / real image	(2)
(b)(ii)	☒ B energy		(1)

Q4.

	Answer	Acceptable answers	Mark
	2100/500 = 4.2 (1) 4.2 × 150 = 630 (million km) (1) Accept ratios as speed is constant 150/500 = distance to Jupiter/2100 OR Distance to Jupiter = (150/500) × 2100 Either for 1 mark	Power of 10 error maximum of 1 mark (speed of light) about 150 000 000 ÷ 500 = 300 000 (km/s) (1) (distance to Jupiter)= 300 000 × 2 100 = 630 000 000 km (1) / = 630 (million km) An answer with no calculation of 630 (million km) gains 2 marks If an answer of 630 million/ 630 000 000 is given with	(2)

		correct working award both marks	

Q5.

Question number	Answer	Additional guidance	Mark
(i)	a description to include count the number of waves(1) (arriving/passing a point) in a specific time(1) use frequency = $\frac{\text{number of waves}}{\text{time}}$ (1)	ignore in one second count the number of waves in one second scores 2 marks (MP1 and MP3) find the time between one wave and the next scores 2 marks (MP1 and MP2)	**(3)** **AO1**

Question number	Answer	Additional guidance	Mark
(ii)	substitution (1) $1.5 = 0.7 \times \lambda$ rearrangement and evaluation 2.1(4) m	 $\frac{1.5}{0.7}$ allow $\frac{0.7}{1.5}$ for 1 mark award full marks for correct answer without working. $\lambda = v/f$ scores 1 mark	**(2)** **AO2**

Question number	Answer	Additional guidance	Mark
(iii)	A description to include: mention of oscillations/vibrations (1) EITHER transverse – (oscillations) perpendicular to direction of wave (travel) (1) OR longitudinal – (oscillations) in same direction as wave (travel) (1)	 up and down OR side to side (movements) OR back and forth transverse movement up and down but longitudinal is side to side (1 mark only)	**(2)** **AO1**

Q6.

	Answer	Acceptable answers	Mark
(i)	5 (cm) (1) 8 (cm) (1)	+5 -5 0.08 m 80 mm	**(2)**
(ii)	B		**(1)**

Q7.

	Answer	Acceptable answers	Mark
(i)	(number of waves =) 5 (1)		**(1)**
(ii)	**Either** 60 ÷ 5 (1) **or** 60 ÷ (their answer to 2(b)(i)) (1)	12 (cm) **or** ecf from number of waves	**(1)**

Q8.

	Answer	Acceptable answers	Mark
	☒ **D** both transverse and longitudinal waves		**(1)**