Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : Waves

Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

Mark Schemes

Q1.

Question Number	Answer	Additional guidance	Mark
	a description to include:		(3) AO 1 1
	• longitudinal – (vibrations) parallel to (direction of travel) (1)	back and forth (oscillations)/ compressions or rarefactions	
	• transverse – (vibrations) at right angles to (direction of travel) (1)	up and down (oscillations)	
	• (connection between) direction of travel with (direction of) vibrations (1)		

Q2.

Question Number	Answer	Acceptable answers	Mark
(a)	**A** longitudinal : yes		**(1)**

Question Number	Answer	Acceptable answers	Mark
(b)	An explanation linking any two of: 1. A cause or description of earthquakes (1) 2. why timing of earthquake is uncertain / complex (1) 3. we cannot see {what is happening deep inside the Earth / where the plates are rubbing} (1)	The release of {energy / pressure/friction force} (in Earth's surface) (caused when tectonic) plates slide past each other any idea of relative movement of plates e.g. move over each other, collide (movement of plates is) {sudden / random / jerky} it is too difficult to {work out / measure} when release of energy will happen "it is difficult to measure when the plates will collide" = 2 marks	**(2)**

Q3.

Question number	Answer	Additional guidance	Mark
	an explanation to include two from: waves cannot be seen (on arrival) (1) person will need another way of detecting the waves (1) (as) a person cannot count to 12 in one second / at a rate of 12 per second (1) frequency too high (1)	idea of coming too fast to count / easy to lose count	**(2)**

Q4.

Question Number	Answer	Additional guidance	Mark
	substitution (1) $\frac{3.0 (\times 10^{8})}{5.8 (\times 10^{-7})}$ evaluation (1) 5.2×10^{14} unit (1) Hz	 answers that round to 5.2×10^{14} award 2 marks for a correct answer without working allow 1 mark for answers that round to 5.2 to any power of ten independent mark accept hz or s^{-1} or per sec(ond) or hertz accept kHz, MHz etc with correct power (10^{11} kHz, 10^{8} MHz)	**(3)** AO 2 1

Q5.

Question number	Answer	Additional guidance	Mark
(i)	**one** from: radio(wave) (1) micro(wave) (1) infrared (1) visible (light) (1) ultraviolet (1) X(-ray) (1) gamma (rays) (1) electromagnetic/em wave(s) seismic **S**(-wave)	Do not credit if sound waves also mentioned γ earthquake **S**(-wave)	**(1)**

Question number	Answer	Additional guidance	Mark
(ii)	$\frac{32}{\text{number of wavelengths}}$ (1) $\frac{32}{10}$ evaluation (1) 3.2 (m)	 accept 9 or 11 for 10 no ecf from mp1 3.6 (3.5r) or 2.9(1) award full marks for the correct answer without working	**(2)**

Question number	Answer	Additional guidance	Mark
(iii)	substitution (1) $\frac{12}{15}$ evaluation (1) 0.8(0) (Hz)	 award full marks for the correct answer without working	**(2)**

Q6.

Question number	Answer	Additional guidance	Mark
	A 9cm B is incorrect because amplitude is measured from zero to the peak displacement C is incorrect because this is half the wavelength D is incorrect because this is the wavelength.		**1** **AO2.1**