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

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

Mark Schemes

Q1.

Question Number	Answer	Acceptable answers	Mark
(a)	• below 20 Hz (1) • above {20 000 Hz / 20 kHz} (1) If Hz or kHz is not seen somewhere, the maximum score is 1 mark.	infrasound ultrasound (in either order) (no units needed for the names)	**(2)**

Question Number	Answer	Acceptable answers	Mark
(b)(i)	C it is a longitudinal wave travelling faster than an S wave		**(1)**

Question Number	Answer	Acceptable answers	Mark
(b)(ii)	Explanation linking the following:- MP1 refraction /changing speed (1) MP2 (due to) changing {material/medium /rock type / density} (1)	ignore changes in direction/ bending (in this case) rock becomes {more / less} {dense / compact}	**(2)**

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Question Number	Answer	Acceptable answers	Mark
(b)(iii)	Explanation linking the following:- MP1 (S / transverse waves) they cannot travel through liquid (1) MP2 Earth's core is (at least part) {liquid/molten} (1) MP3 (so) (S waves) they cannot travel through core (to other side of Earth) (1)	Check diagram for creditworthy points. they can only travel through solids may be stated in part (ii) (S / transverse waves) they cannot be detected on opposite side of the Earth to (collision site / earthquake)	**(3)**

Question Number	Answer	Acceptable answers	Mark
(b)(iv)	Suggestion to include any two from: MP1 idea that {kinetic energy/force/ momentum} of meteor might cause the earthquake (1) MP2 (earthquakes happen where) plates slide {past/over/under/away from/against} each other (1) MP3 (plates move) suddenly MP4 (meteor collision) starts seismic waves /P/S (1)	(meteor) it has large amount of kinetic energy (earthquakes happen where) plates collide rub/move for slide (earthquakes happen when) large amount of energy released in / near Earth's surface (plates) jolt/jerk vibrations passing through the Earth condone earthquake waves {kinetic energy/force /momentum} of meteor can cause the plates to slide past each other = 2	**(2)**

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Q2.

	Answer	Acceptable answers	Mark
(i)	substitution (1) 0.65 = 80 / t transposition (1) t = 80 / 0.65 (123 seconds)	transposition and substitution can be in either order . Allow reverse calculations eg speed = 80/120 (1) = 0.67 (about 0.65) (1) or distance = 0.65 × 120 (1) = 78 km (about 80) (1).	**(2)**
(ii)	A description linking any three detection of arrival of P and S waves (1) measurement of difference in arrival times (1) calculation of distance (from epicentre to station) (1) triangulation/using three / several stations (1)	Reward suitable labelled diagram	**(3)**
(iii)	A suggestion including any two of the following Infrasound (1) some animals can hear waves below human frequency range / 20 Hz (1) they could hear P waves arriving before the (stronger) S waves arrive (1)	Some animals have greater audio / tactile sensitivity than humans	**(2)**

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