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**

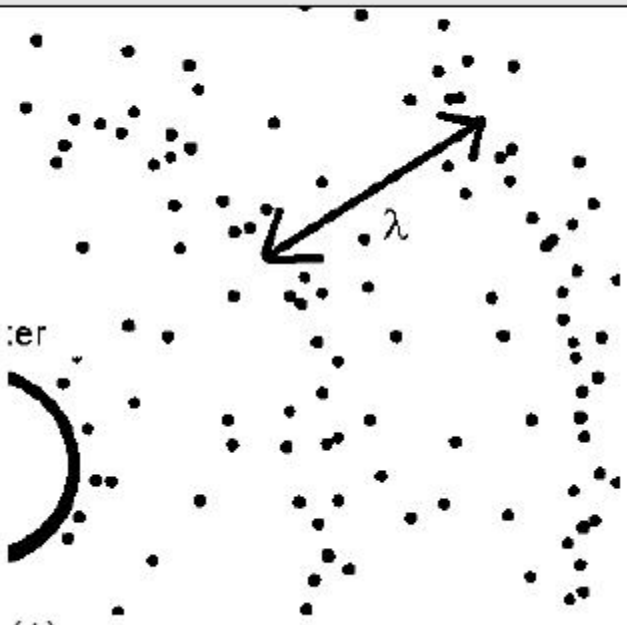
Mark Schemes

Q1.

	Answer	Acceptable answers	Mark
(i)	D ultrasound waves (1)		**(1)**
(ii)	Any 3 from • emits (high frequency/ultra) (sound)(1) • (sound is) reflected (off fish) (1) • (reflection) detected by Dolphin (1) • dolphin (estimates) time between (sending and receiving) sounds (1) • dolphin is able to change time into (estimate of) distance (1)	Makes/sends out/produces (ultra sound/signal/wave) Uses 'high frequency sound' is insufficient (sound) bounces off (fish) or echoes towards dolphin 1st three marks can be scored on the diagram. ie unless stated otherwise, assume any waves/rays starting at dolphin are ultrasound. Rays do not need to be straight	**(3)**

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Q2.

Question number	Answer	Additional guidance	Mark
(i)	 (1)	any similar distance labelled wavelength / λ between the equivalent of 2 consecutive compressions	(1)

Question number	Answer	Additional guidance	Mark
(ii)	description including any two from: particles vibrate / oscillate/ move backwards and forwards (1) along a radius/ parallel to direction of travel/ energy transfer (1) about mean /fixed positions (1)	 allow air for particles in same direction as wave allow one mark for 'sound is a longitudinal wave' if no other mark awarded	(2)

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Q3.

	Answer	Acceptable answers	Mark
(a)	☒ **D** both transverse and longitudinal waves		**(1)**
(b)	A description including **three** of the following points • molten rock/magma (in mantle) (1) • convection currents (in mantle) (1) • plates move (1) • build up of pressure/force/energy (when plates (not) sliding over/under/past (each other)) (1) • sudden movement when pressure becomes too great/is released (1) • This sudden movement of plates is an earthquake (1)	Marks can be awarded on a labelled diagram Description of convection currents or arrows on diagram plates rub together Jolt/jerk when pressure becomes too great/ is released	**(3)**
(c)	relevant values 110 and 10 seen anywhere(1) 100 (s) (1) **acceptable range 95 to 105** (s)	(could be on chart) tolerance +/- 5 s give full marks for correct answer, no working	**(2)**
(d)	any vertical line of 10 squares on graph between P- wave and Swave (1) OR times eg 52 (s) – 32(s) Range (48 to 56) – (29 to 35) 220 (km) (1)	Range 9 to 11 squares range 200 to 240 (km) give full marks for correct answer, no working	**(2)**
(e)	a description including **two** of the following: • longitudinal / sound (wave) (1) • (frequency) less than <u>20</u> Hz (1)	<u>Frequency</u> below range/too low for (normal) human ear	**(2)**

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