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

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Name of the Student:_____
Max. Marks : 22 Marks **Time : 22 Minutes**

Mark Schemes

Q1.

	Answer	**Acceptable answers**	**Mark**
	An explanation including: • Infrasound (1) Plus one from: • Decrease/change in amplitude is least (1) • can be detected/'heard' further away (1)	Marks are independent Stays the biggest/stays high. Has a bigger amplitude would travel the furthest/further	**(2)**

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Q2.

Question number	Answer	Additional guidance	Mark
(i)	substitution (1) % difference = $\frac{(240 - 343)}{343} \times 100$ evaluation (1) (-) 30 (%)	OR 343 – 240 in numerator award full marks for the correct answer without working allow 1 mark for division by 240 yielding 43% allow one mark for $\frac{240}{343} \times 100 = 70$ %	(2)

Question number	Answer	Additional guidance	Mark
(ii)	explanation linking any two of: reaction time is significant (with 0.5s or less) (1) the reaction time will be different for each of the students (1) effects on reaction times (1) students are at different distances (from starting pistol) (1) anticipation of flash / bang (1)	 accept reaction time is large compared with travel time differences in perception / acuity of light and sound	(2)

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Question number	Answer	Additional guidance	Mark
(iii)	explanation linking: use a (much) longer distance **OR** use electronic timer (1) with effect (1) reduces/eliminates the significance/impact of the reaction time **OR** gives a more manageable time to measure	 all stand the same distance from the starting pistol (1)	**(2)**

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Q3.

Question number	Answer	Additional guidance	Mark
(i)	Any two valid differences e.g. mice are (more) sensitive to higher frequencies (than humans) (1) humans are (more) sensitive to lower frequencies (than mice) humans have a lower intensity of sound (threshold) to just hear (1) mice have two minima on the graph, humans one (1)	 humans more sensitive (overall / for lower frequencies) two particularly sensitive frequencies	(2) grad

Question number	Answer	Additional guidance	Mark
(ii)	number **and unit** must both be correct to get the mark 2.5 kHz **OR** 2.5 kilohertz	 acceptable range 2.0 to 3.0 kHz 2.0 to 3.0 kilohertz	(1) cler

Question number	Answer	Additional guidance	Mark
(iii)	(this frequency corresponds with) most sensitive / the minimum (frequency) (1)		(1) grad

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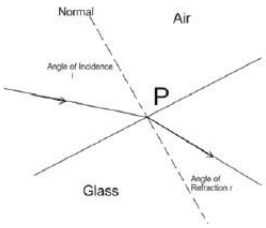
Q4.

	Answer	Acceptable answers	Mark
(a)(i)	An explanation linking: Angle (of incidence) in glass (1) greater than critical angle / 42° (1)	Angle in air cannot be greater than 90° for 1 mark Glass has a higher refractive index than air for 1 mark	**(2)**
(a)(ii)	 angle i from normal in air (1) angle r from normal in glass (1)	accept for 1 mark angle i in air <u>and</u> angle r in glass/ <u>both</u> angles measured from normal	**(2)**
(a)(iii)	☒ **C** speed decreases		**(1)**
(b)(i)	An explanation linking any three of the following: (Optical fibres) bend (1) some fibres carry light to the inside of the patient (1) some fibres transmit the reflected light (1) light passes up/down fibres by TIR (1) light is reflected inside the patient (1) image is analysed by computer (1)	Accept suitable labelling on a Diagram Image projected on a screen	**(3)**
(b)(ii)	Either Breaks/blasts/smashes (1) Kidney stones (1) or Energy absorbed (1) to help repair muscle tissue (1) or Use of gel (1) to prevent loss of intensity (1) or	bruising/clots increases blood flow Allow (1) mark for suitable diagnosis e.g. prenatal scan	**(2)**

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