Question number	Answer	Notes	Marks
2 (a)	any five from: MP1. outlines a viable method; MP2. realistic values suggested for experiment to work; MP3. suitable measuring instrument named; MP4. further detail of setup; MP5. idea of repeats **AND** average; MP6. Correct formula for described method;	a fully labelled diagram can score all the marks e.g. • measuring time for a known distance • measuring wavelength for a known frequency e.g. • at least 1m for microphones/sound sensors and oscilloscope/data logger method • at least 100m for seeing and hearing a clap method • at least 50m for wall and echo method • wavelength measured at least 10cm e.g. stop clock, stopwatch, ruler, tape measure, oscilloscope, trundle wheel, timer e.g. • start timing when see a clap and stop when hear it • clap by wall and time how long for clap to come back • moving a microphone until waveforms line up on oscilloscope • for echo method, idea time and distance is “there and back” allow repeats AND identifying anomalies e.g. • speed = distance / time • speed = frequency × wavelength	5

(b)	(i)	period represented by 4 squares; correct use of x-scale; correct evaluation; e.g. period = 4 squares period = 4 × 5.0 ($\times 10^{-3}$) period = 20 ms = 2.0 × 10^{-2} (s)	 allow ECF from wrong number of squares if clear in working -1 POT error answer of 0.01, 0.04 (s) scores 2 marks allow 0.02 (s)	3
	(ii)	substitution into given formula; correct evaluation; e.g. frequency = 1 / 0.02 frequency = 50 (Hz)	allow ECF from (i)	2

Total for Question 2 = 10 marks