Question Number	Answer		Mark
17(a)	Measure the position of the microphone **Or** measure the distance of the microphone from the speaker	(1)	
	Move microphone gradually until crest on the lower trace lines up with the trough of the top trace and measure the position **Or** move microphone until traces are next in antiphase	(1)	
	(Calculate the) distance moved by the microphone (which) is the wavelength	(1)	
	A method to determine the time period T from the oscilloscope [e.g. time period is approx. 5 x the timebase of the oscilloscope]	(1)	
	Multiply wavelength by $1/T$	(1)	**5**
	(Do not award MP5 for "use $v = f\lambda$")		
17(b)	Amplitude of the upper trace has increased **Or** trough of one trace is (again) aligned to top of the other trace.	(1)	
	Photograph 3 had the microphone closer to the loudspeaker **Or** Microphone has been moved a whole number of wavelengths.	(1)	
	(Sound) intensity varies with distance from loudspeaker	(1)	**3**
	(For "amplitude", allow "height" or "vertical displacement" but not "size" or "displacement")		
	(To award both MP1 and MP2, the statements need to be linked i.e. first alternative in MP1 linked to first alternative in MP2) (MP2 via second alternative can be awarded if candidate states that the microphone has been moved one wavelength)		
	Total for question 17		**8**