

Eduqas Physics GCSE
Topic 8.4: Microphones and
speakers
Mark Schemes for Questions by
topic

1.

Some reference to the movement in the sound wave eg air molecules oscillate/compressions and rarefactions (1)

diaphragm vibrates/equivalent (1)

coil moves (1)

cuts field lines/change in flux linkage (1)

induction occurs (1)

a.c. signals (1)

(6 marks)

2.

(b)	any four from: MP1. alternating current changes direction (continuously); MP2. current in coil produces alternating magnetic field/eq; MP3. (producing) force on the coil/cone; MP4. reversing direction of current reverses direction of the force; MP5. hence coil/cone vibrates; MP6. cone vibrates air particles;	allow any marking point if clear from diagram allow changing magnetic field allow coil / cone moves in and out / backwards and forwards	4
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3.

Question	Answers	Extra information	Mark	AO / Spec. Ref.
11.3	Level 3: A detailed explanation linking variations in current to the pressure variations of a sound wave, with a logical sequence.	5-6	6	AO1/2 4.6.1.1 4.7.2.4
	Level 2: A number of relevant points made, but not precisely. A link between the loudspeaker and a sound wave is made.	3-4		
	Level 1: Some relevant points but fragmented with no logical structure.	1-2		
	No relevant content	0		
	Indicative content the current in the electrical circuit is varying the current passes through the coil the coil experiences a force (inwards or outwards) reversing the current reverses the force the size of the current affects the size of the force the varying current causes the coil to vibrate the (vibrating) coil causes the cone to vibrate the vibrating cone causes the air molecules to move the movement of the air molecules produces the pressure variations in the air needed for a sound wave the air molecules bunch together forming compressions and spread apart forming rarefactions			