

Q1.(2019)

a)

to convert (the pressure variations in) sound (waves) into variations in current / p.d

b)

sound (waves) cause the diaphragm to vibrate

the diaphragm causes the coil / wire to vibrate

the coil / wire moves through the magnetic field

**or**

the coil / wire cuts magnetic field lines

a potential difference is induced (across the ends of the coil / wire)

Q2.(2020)

a)

the coil moves through the magnetic field

**or**

the coil cuts magnetic field lines

a potential difference is induced (across the coil)

there is a complete circuit, so a current is induced (in the coil)

every half turn the potential difference reverses direction

so (every half turn) the current changes direction

Subtopic: Induced potential and generators

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b)

provides a continuous /  
moveable contact / connection  
(between the coil and the  
transformer / contacts / brushes)

**or**

stops the wires from twisting  
together

c)

(after disconnection) there is no  
induced current

so no magnetic field (produced  
around / by the coil)

to oppose the movement of the  
coil

Q3.(2023)

current

**or**

potential difference

Q4.(2023)

the coil moves through the  
(magnetic) field

**or**

the coil cuts (magnetic) field  
lines

a potential difference is induced  
(across the coil)

there is a complete circuit, so a  
current is induced (in the coil)

(because) each half-revolution,  
the two ends of the coil swap  
from one brush to the other

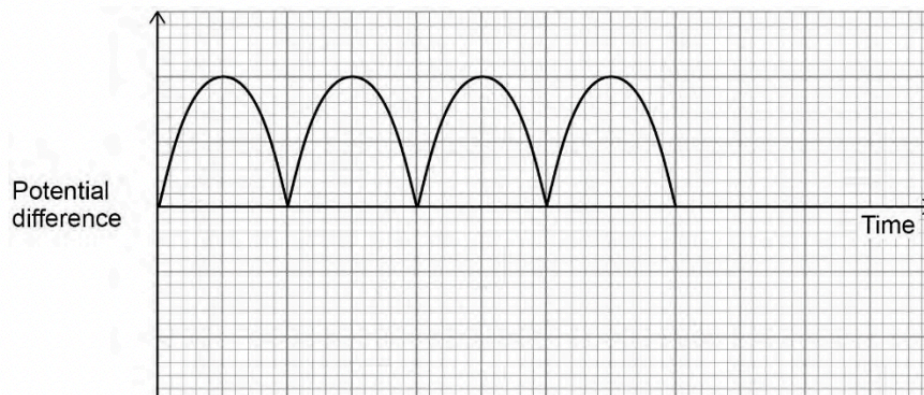
**or**

each half-revolution, (the two  
halves of) the commutator  
switch brushes / contacts

(so) the direction of the  
(induced) current / potential  
difference does not reverse  
every half rotation

Q5.(2023)

a)



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b)

(after disconnection) there is no  
(induced) current

(so) no magnetic field (produced  
around / by the coil)

to oppose the movement of the  
coil

Q6.(2024)

a)

generator (effect)

b)

wire cuts through the magnetic  
field (between the magnets)

a potential difference was  
induced (across the wire)

as it was part of complete circuit  
(there was a current in the  
circuit)

c)

the needle will deflect to  $-0.4$   
mA

Q7.(2024)

(the pressure variations in) the  
sound (waves) cause the  
diaphragm to vibrate

the diaphragm causes the coil /  
wire to vibrate

(the coil repeatedly changes  
direction) inducing an alternating  
current (in the circuit)