Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Q1.

* Figure 26 shows a picture of an electrical device and a simplified drawing of the important parts.

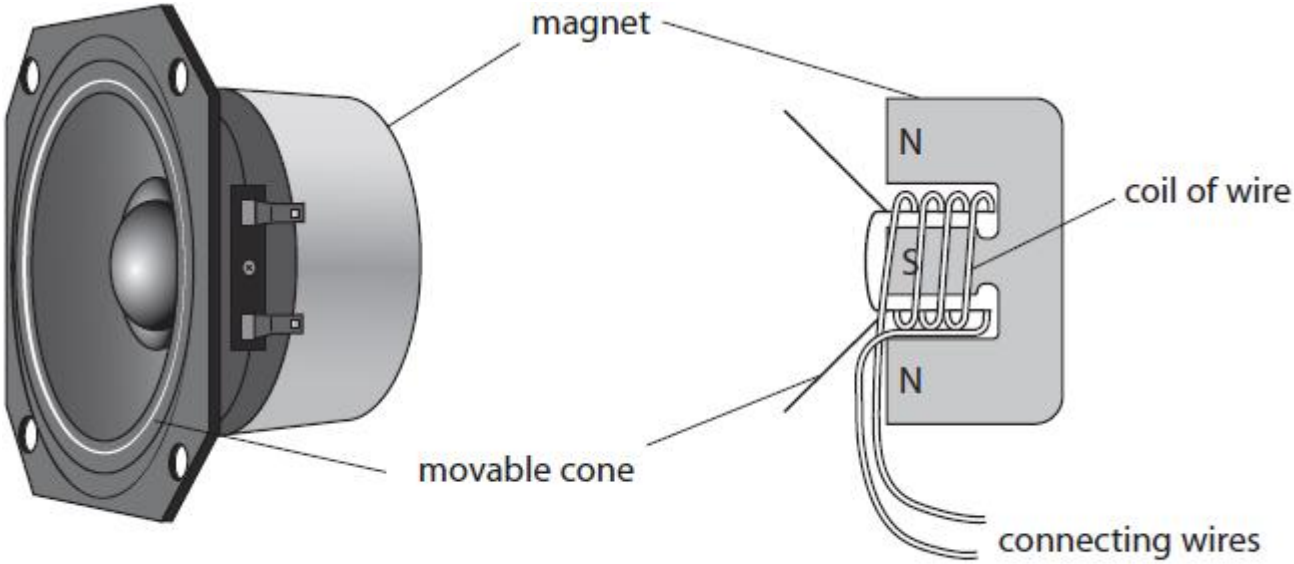

Figure 26

The device can be used as a loudspeaker or it can be used as a microphone.

Compare how the device operates when used as a loudspeaker with how the device operates when used as a microphone.

(6)

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(Total for question = 6 marks)

Q2.

Which of these is designed to convert pressure variations in sound waves into alternating currents in electrical circuits?

(1)

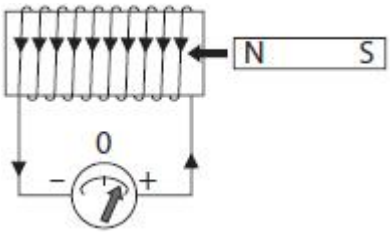
- ☒ **A** an amplifier
- ☒ **B** headphones
- ☒ **C** a loudspeaker
- ☒ **D** a microphone

(Total for question = 1 mark)

Q3.

Figure 11 shows a magnet moving into a coil.

This generates a current.



The meter deflects to the right.

Which one of these would cause a deflection to the left?

(1)

- ☒ **A** move the north pole to the left more rapidly
- ☒ **B** keep the magnet still and move the coil to the left
- ☒ **C** keep the magnet still and move the coil to the right
- ☒ **D** move the north pole in to the left and then suddenly stop it

(Total for question = 1 mark)

Q4.

There is a changing magnetic field in the core of a transformer.

(i) Describe the cause of the changing magnetic field in the core of the transformer.

(2)

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.....

.....

(ii) A potential difference of 230 V is applied across the primary coil of a transformer.

There is a potential difference of 15 V across the secondary coil.
The primary coil has 2000 turns.
Calculate the number of turns in the secondary coil.
Use an equation selected from the list of equations at the end of this paper.

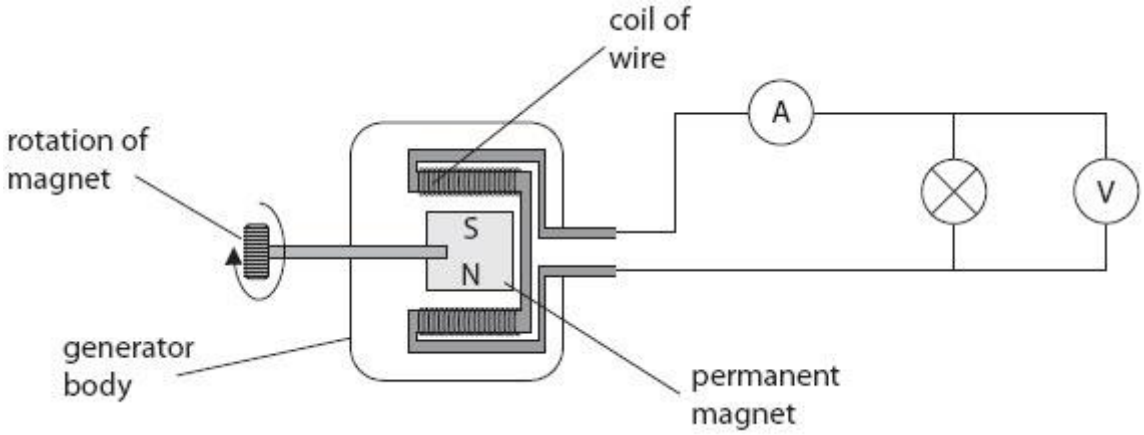
(3)

..... turns

(Total for question = 5 marks)

Q5.

The diagram shows a simple generator connected to a lamp.



The magnet is made to spin at a steady speed.
The ammeter gives a reading of 1.5 A.
The voltmeter gives a reading of 6 V.
(i) Calculate the output power of the generator.

(2)

.....

(ii) State two changes to the design of the generator that would give a larger output power for the same speed of rotation.

(2)

.....

.....

(iii) This generator supplies an alternating current (AC) to the lamp.
Other types of generators supply a direct current (DC).
Describe the difference between charge movement in a direct current and in an alternating current.

(2)

.....

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