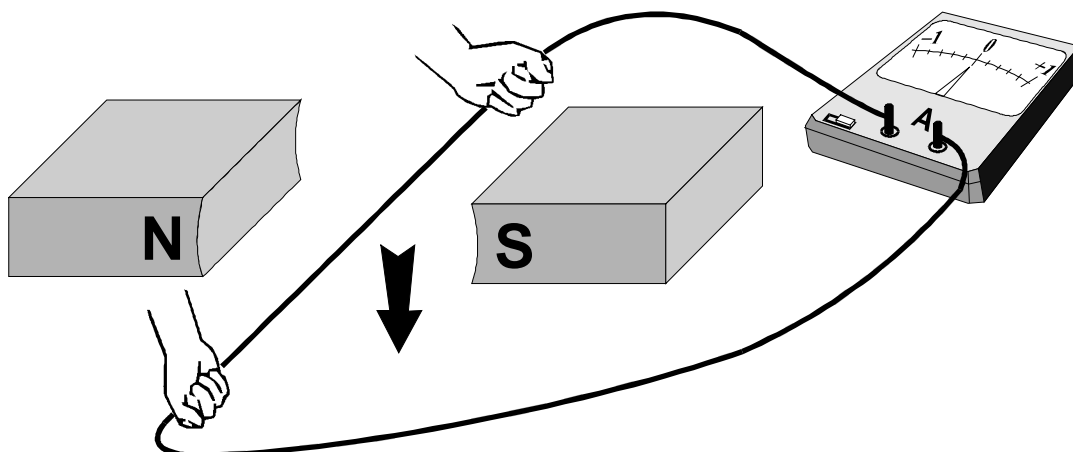


# Generators – Past Paper Questions

Name .....

1. (a) The diagram shows one way of demonstrating a particular electrical effect.



As the wire is moved downwards between the poles of the magnet the ammeter needle swings to the right.

(i) What name is given to this electrical effect?

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(1)

(ii) What happens to the ammeter needle when the wire is moved upwards between the poles of the magnet?

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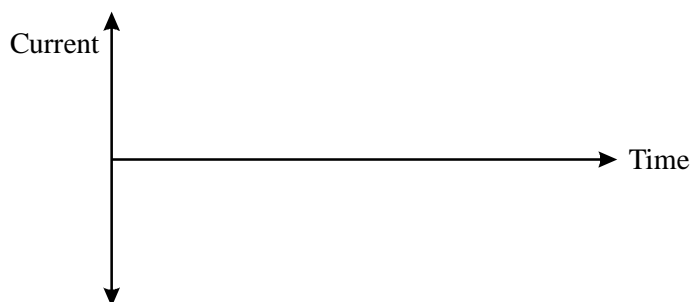
(1)

(iii) When the wire is held stationary between the poles of the magnet the ammeter needle does not move. Explain why.

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(2)

(b) Complete the following sketch graph to show one complete cycle of an alternating current.

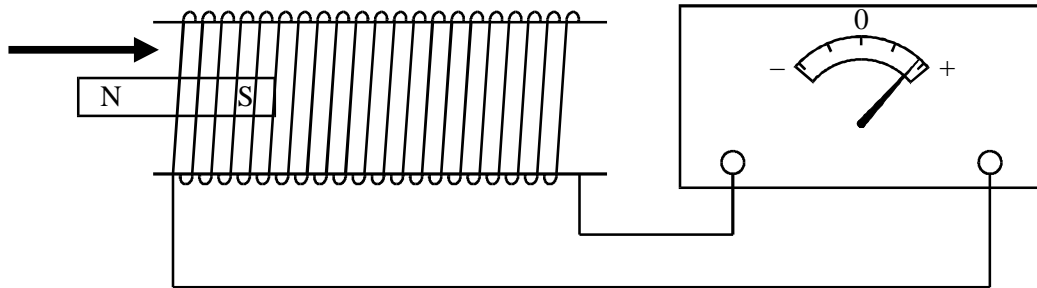


(1)

(Total 5 marks)

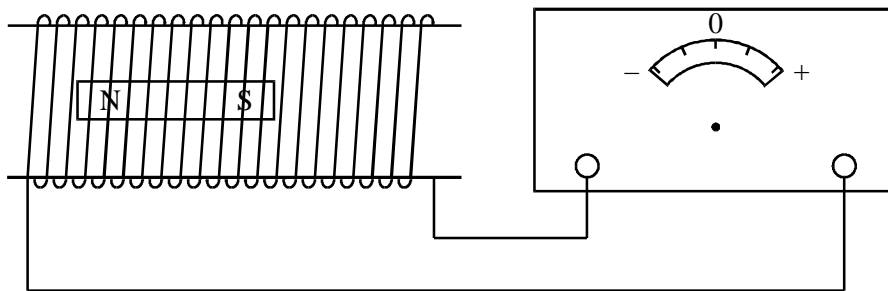
2. (a) The diagram shows a magnet being moved into a coil of wire.

The reading on the meter is shown in the diagram.



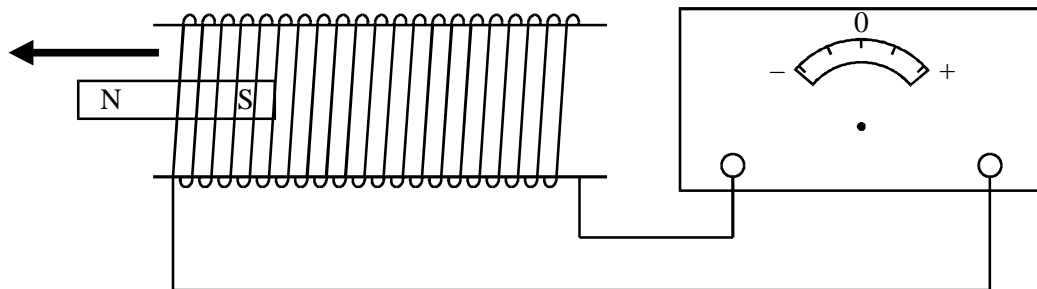
Draw on the diagram the meter reading that you would expect to get in each of the following cases.

- (i) The magnet is at rest inside the coil.



(1)

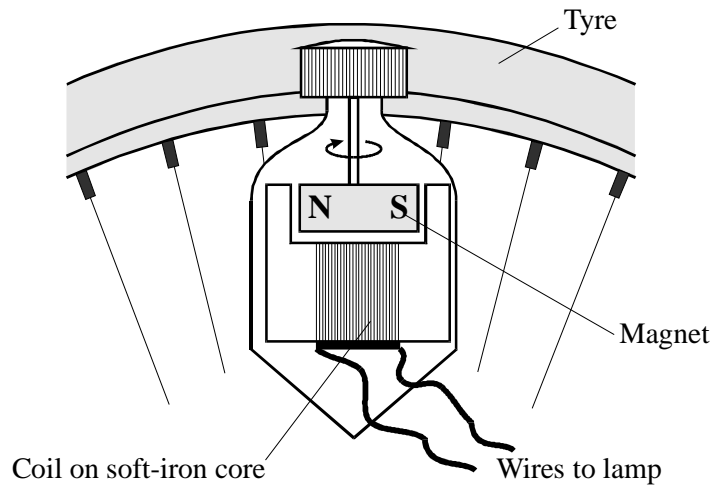
- (ii) The magnet is moved out of coil.



(1)

To gain full marks in this question you should write your ideas in good English. Put them into a sensible order and use the correct scientific words.

(b) The diagram below shows a bicycle dynamo and part of the wheel.



Explain, as fully as you can, why a current flows through the bicycle lamp when the wheel of the bicycle turns.

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(4)

(c) Give **three** ways of increasing the size of the induced voltage from a dynamo.

1 .....

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2 .....

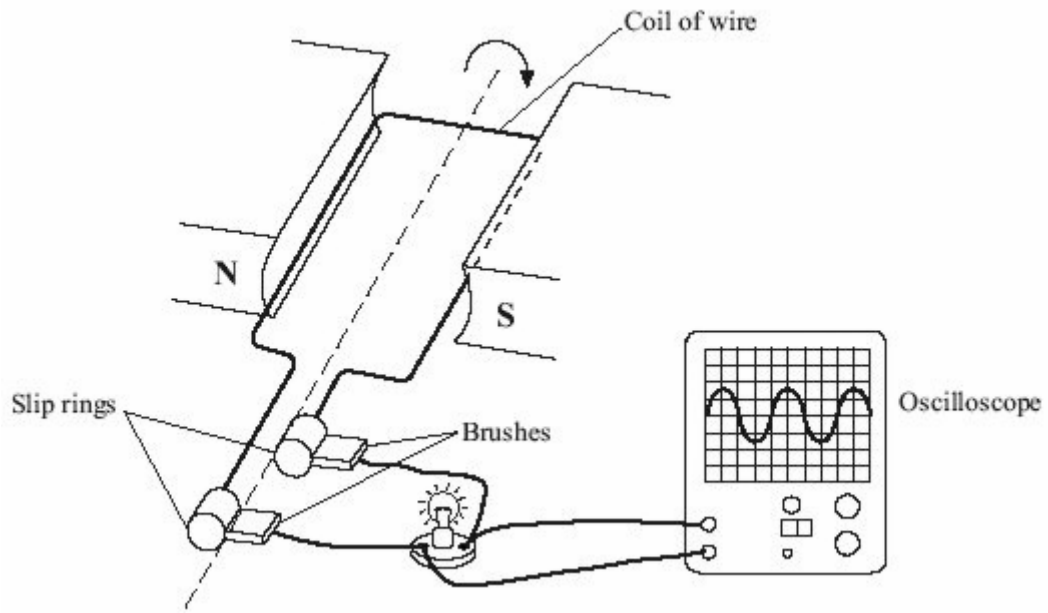
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3 .....

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(3)  
(Total 9 marks)

3. (a) The diagram shows a simple generator. The trace on the oscilloscope shows that the generator produces an alternating current.



- (i) Explain how the generator works. Include in your answer the reasons why the slip rings and brushes are needed.

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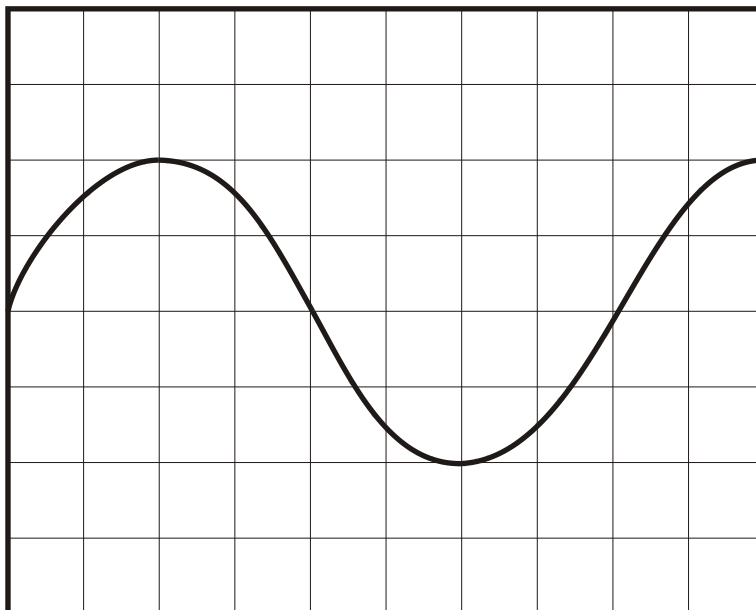
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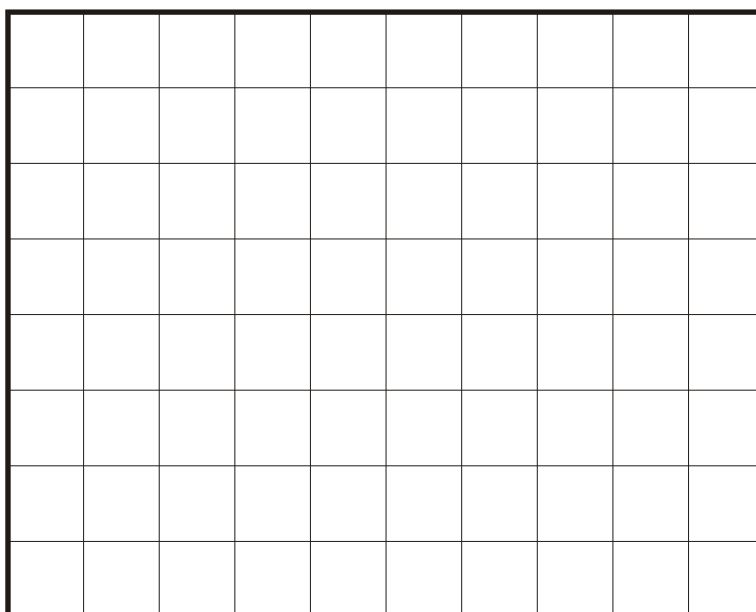
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- (b) The grid below shows the trace on the oscilloscope when the coil is rotated at a steady rate in the magnetic field.



The speed of rotation of the coil is now doubled.

On the grid below sketch the trace which you would expect to see on the oscilloscope screen. The controls of the oscilloscope have not been changed.



(3)

(Total 7 marks)