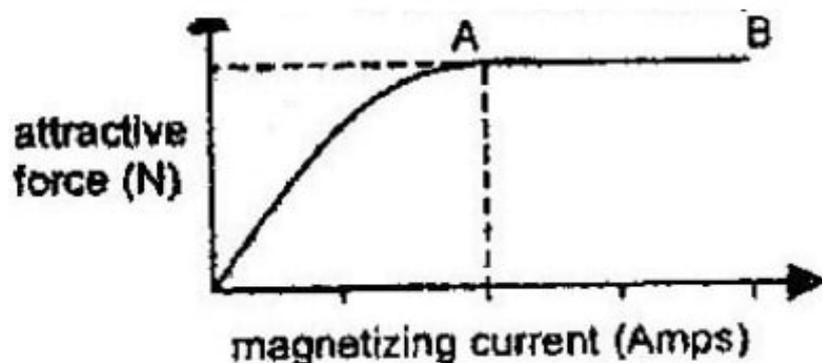


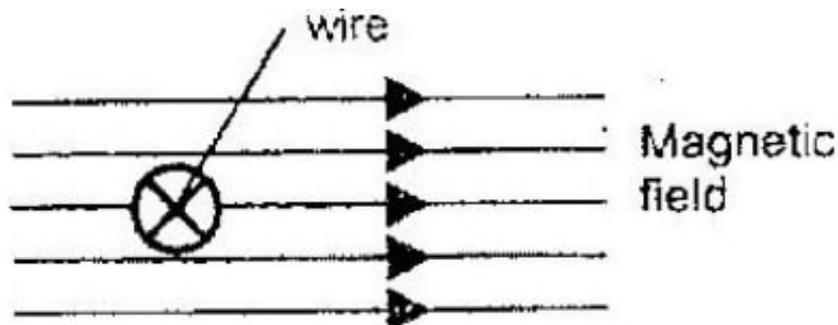
Magnetism Questions and Answers - Physics Form 2 Topical Revision

Questions

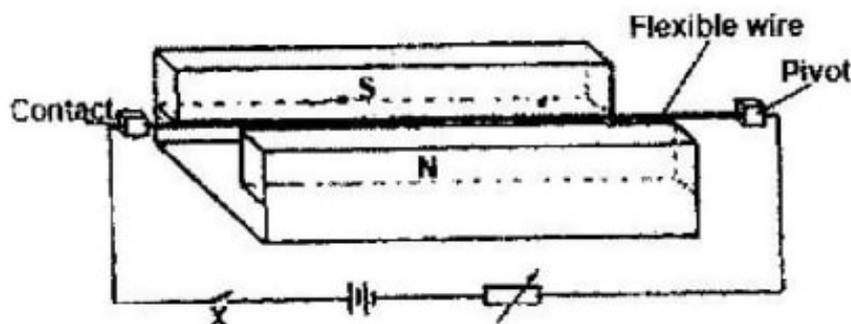
1. The graph in the figure below shows the relationship between the attractive forces of an electromagnetic and the magnetizing current. Give reasons for the shape of the curve in terms of the domain theory.



2. The figure shows a wire in a magnetic field. A current is switched on to flow through the wire in the direction shown. State the direction of motion of the wire.



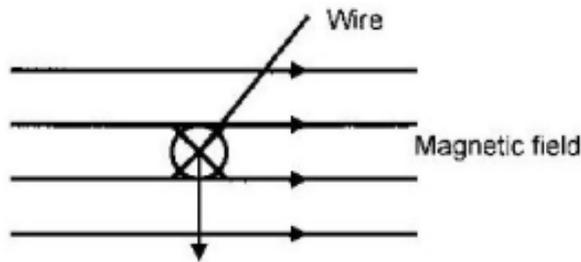
3. The diagram in the figure below shows a flexible wire in a magnetic field.



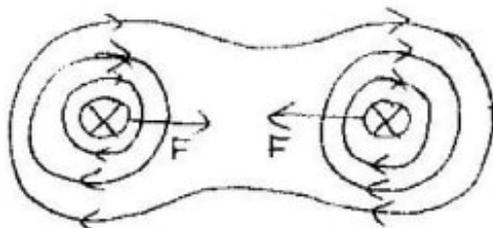
- i. Explain the behaviour of the wire when the switch K is turned on
 - ii. What is the behaviour of the wire if R is reduced?
4. You are provided with two iron bars, X and Y, one is magnetized and the other is not. Explain how you would identify the magnetized bar without using a magnet.
5. One way of demagnetizing bar is to place it in a solenoid in which an alternating current (ac) flows. How is the demagnetization achieved?
6. Give two reasons why soft irons is used as a core of the coil of an electric bell.
7. Give two differences between uniform and non-uniform magnetic fields
8. The figure below represents a long horizontal insulated wire AB connected to an electric circuit. A plotting compass is placed on the wire as shown. When the switch K is closed, the plotting

Answers

- When the current increases the domains align themselves more until all of them are the same perfectly lightened direction (magnetic saturation). The magnetic force of attraction becomes constant.
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- Wire curves/ jacks upwards according to Fleming's Left Hand Thumb Rule.
- Suspend each of them in the earth's magnetic field. Change their rest position and record the final direction in which key will rest. Repeat this procedure several times and record the directions. Do this experiment on each of the rods. It is noted that, the magnetized rod will rest in the earth's North-south direction each time it is disturbed. The unmagnetized rod rests in random directions.
- The a.c magnetises the magnet alternately in the opposite directions 50 times in one second. When withdrawn slowly, different parts attain random polarities.
- It gains and loses magnetism easily. It is only magnetized if there is a magnetic field around it and loses its magnetism immediately the field is withdrawn. It also requires very little energy to magnetise and demagnetise.
- In fields the lines are parallel and the force acting on a small magnet/conductor is uniform. The opposite is the case for the non-uniform field.
- Increasing current by decreasing resistance
- Turning wire AB to an angle of 90°
- Increasing number of cells.
- Amount of current
- Strength of magnetic field
- Angle between magnetic field and direction of conductor.
- Attraction can be between opposite poles or a magnet and a non-magnetized magnetic material.
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12.

a. i) and ii)

Suspend each of them in the earth's magnetic field. Change their rest position and record the final direction in which key will rest. Repeat this procedure several times and record the directions. Do this experiment on each of the rods. It is noted that, the magnetized rod will rest in the earth North-south direction each time if is disturbed. The unmagnetised rod rests in random directions.

b. When magnetizing current is increased, the dipoles align more and more until magnetic saturation is attained where the magnetization becomes maximum and remains constant. Substance P requires less current than Q to attain saturation. This means that P is easily