



PHYSICS

BOOKS - NAND LAL PUBLICATION

MAGNETIC EFFECTS OF ELECTRIC CURRENT

Intext Questions

1. Why does a compass needle get deflected when brought near bar magnet?



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2. Draw magnetic lines around a bar magnet



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3. State two properties of magnetic field lines.



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4. Why two magnetic lines of forces never intersect each other?



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5. Consider a circular loop of wire lying in the plane of the table, let the current pass through the loop clockwise apply right hand rule to find out the direction of the magnetic field inside and outside the loop.



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6. The magnetic field in a given region is uniform. Draw a diagram to represent it.



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7. Choose the correct option

The magnetic field inside a long straight solenoid carrying current

A. is zero.

B. decreases as we move towards its end.

C. increases as we move towards its end.

D. is the same at all points.

Answer: D



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8. Which of the following property of proton can change while it moves freely in a magnetic field?

There may be more than one correct answer.

A. mass

B. speed

C. velocity

D. momentum

Answer: C::D



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9. A positivity charged particle emitted from a nucleus alpha particle projected towards west

is deflected towards north by a magnetic field.

The direction of the magnetic field is,

A. towards south

B. towards east

C. downward

D. upward

Answer: D



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10. State Fleming's left hand rule.



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11. What is the principle of an electric motor?



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12. What is the role of the split ring in an electric motor?



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13. Explain different ways to induce current in a coil.



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14. State the principle of electric generator



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15. Name some sources of direct current.



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16. Which sources produce alternating current?



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17. Choose the correct option: A rectangular coil of copper wires is rotated in magnetic field. The direction of induced current changes once in each:

A. two revolutions

B. one revolution

C. half revolution

D. one-fourth revolution

Answer: C



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18. Name two safety measures commonly used in electric circuits and appliances



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19. What precautions should be taken to avoid the overloading of domestic electric circuit?

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Activity 13 1

1. Observe the change in the position of the compass needle.

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Activity 13 2

1. What do you observe ?



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2. Why do the iron filings arrange in such a pattern ?



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3. What does this pattern demonstrate ?

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4. What do the crowded no. of iron filings at the end of magnet indicate ?

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Activity 13 3

1. How would you detect the presence of magnetic field on an unknown planet?



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2. What is the direction of magnetic field lines a magnet ?



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3. In which part of a bar magnet, The magnetic field lines are more denser?



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Activity 13 4

1. What happens when a current-carrying conductor is placed over a compass needle ?



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2. What will happen when the direction of current is changed in conductor ?

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3. What happens when a current-carrying conductor is placed over a compass needle ?

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Activity 13 5

1. What is the nature of magnitude lines of force due to current in a straight conductor?



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2. What do these concentric circles represent?



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3. How can the direction of the magnetic field be found ?



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Activity 13 6

1. Is there a magnetic field around a current carrying circular conductor ?



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2. What is the nature of magnetic field lines two points opposite to each other on circular current-carrying conductor ?



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3. Where will the value of magnetic field maximum due to current-carrying circular conductor?



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Activity 13 7

1. When is the force experienced by a current carrying conductor placed in a magnetic field, the largest?



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2. The direction of force experienced by a current carrying conductor placed in a magnetic field is given by



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3. Find the force acting on a current carrying conductor placed in an uniform magnetic field.



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4. What will happen when the direction current through current-carrying conductor is reversed ?



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1. What do you conclude from this activity ?



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Activity 13 9

1. What happens when a current-carrying coil brought nearer to the another coil ?



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2. What is the value of induced current in second coil if there steady current in coil that is bought near it ?



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3. What are the names of current-carrying coil and another coil connected to galvanometer ?



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4. Which will produce magnetic field either primary or secondary coil ?



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5. Write the factors, on which strength of reduced current depends in secondary coil ?



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1. Which of the following correctly describes the magnetic field near a long wire?

A. The field consists of straight lines perpendicular to the wire.

B. The field consists of straight lines parallel to the wire.

C. The field consists of radial lines originating from the wire.

D. The field consists of concentric circles centred on the wire.

Answer: D



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2. The phenomenon of electromagnetic is:

A. the process of charging a body.

B. the process of generating magnetic field

due to a current passing through a coil.

C. producing induced current in a coil due

to relative motion between a magnet

and the coil.

D. the process of rotating a coil of an electric motor.

Answer: C



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3. The device used for producing electric current is called:

A. generator

B. galvanometer

C. ammeter

D. motor

Answer: A



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4. The essential difference between an AC generator and a DC generator is that:

- A. AC generator has an electromagnet while a DC generator has permanent magnet.
- B. DC generator will generate a higher voltage.
- C. AC generator will generate a higher voltage.
- D. AC generator has slip rings while the DC generator has a commutator.

Answer: D



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5. At the time of short circuit, the current in the circuit.

A. reduces substantially.

B. does not change.

C. increases heavily.

D. vary continuously.

Answer: C



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6. State whether the following statements are true or false. An electric motor converts mechanical energy into electric energy



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7. State whether the following statements are true or false: An electric generator works on the principle of electromagnetic induction



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8. State whether the following statements are true or false: The field at the centre of a long circular coil carrying current will be parallel straight lines.



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9. State whether the following statements are true or false. A wire with a green insulations usually the live wire.





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10. Name the methods of producing induced emf.



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11. How does a solenoid behave like a magnet? Can you determine north and south poles of current carrying solenoid with the help of bar magnet? Explain



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12. When is the force experienced by a current carrying conductor placed in a magnetic field, the largest?



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13. Imagine that you are sitting in a chamber with your back to one wall an electron beam moving horizontally with back towards the front wall ,is deflected by a strong magnetic

field to your right side. What is the direction of the magnetic field?



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14. What is an electric motor?



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15. Name some devices in which electric motors are used.



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16. A coil of insulated copper wire is connected to a galvanometer, what will happen if a bar magnet is pushed into the coil



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17. Two circular coils A and B placed closed to each other. If the current in the coil A is changed, will some current be induced in coil B? Give reason



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18. The direction of magnetic field produced on passing electric current in a conductor is determined by



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19. When is the force experienced by a current carrying conductor placed in a magnetic field, the largest?



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20. When does an electric short circuit occur?



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21. What is the function of earth wire? Why is it necessary to earth metallic appliances?



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[Additional Questions](#)

1. What is magnetic field intensity?



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2. What does this pattern demonstrate ?



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3. What is the nature of magnetic field produced by straight solenoid?



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4. Write the advantages of AC over DC.



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5. How will you locate the current-carrying wire concealed in a wall ?



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6. State four properties of a bar magnet.



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