

AMIT AJMANI'S ACADEMY

D-16/82, SECTOR-7, ROHINI

PH: 9810476588, 9953371470

X PHYSICS CLASS TEST

M.M.-30

Name of Student: _____ Class & Sub: _____

Topic of Test: **MAGNETIC EFFECTS OF CURRENT No. 1** Date: _____

1. Draw magnetic field lines around a bar magnet. 1
2. What is shape of magnetic field lines due to straight current carrying conductor? 1
3. Why don't two magnetic lines of force intersect each other? 1
4. The magnetic field in a given region is uniform. Draw a diagram to represent it. 1
5. When is the force experienced by a current-carrying conductor placed in a magnetic field largest? 1
6. Imagine that you are sitting in a chamber with your back to one wall. An electron beam, moving horizontally from back wall towards front wall, is deflected by a strong magnetic field to your right side. What is the direction of magnetic field? 1
7. Consider a circular loop of wire lying in the plane of the table. Let the current pass through the loop clockwise. Apply the right-hand rule to find out the direction of the magnetic field inside and outside the loop. 2
8. List the properties of magnetic lines of force. 2
9. State Fleming's left-hand rule. 2
10. Explain the different ways to induce current in a coil. 2
11. What is the principle of an electric motor? 2
12. State function of earth wire? Why is it necessary to earth metallic appliances? 2
13. Two circular coils A and B are placed close to each other. If the current in the coil A is changed, will some current be induced in the coil B? Give reasons. 2
14. State the direction of magnetic field lines: (i) outside magnet & (ii) Inside magnet? 2
15. How does a solenoid behave like a magnet? Can you determine the north and south poles of a current-carrying solenoid with the help of a bar magnet? Explain 2
16. A coil of insulated copper wire is connected to a galvanometer. What will happen is a bar magnet is (i) pushed into the coil, (ii) withdrawn from inside the coil, and (iii) held stationary inside the coil? 3
17. State the rule to determine the direction of a (i) magnetic field produced around a straight conductor carrying current, (ii) force experienced by a current-carrying straight conductor placed in a magnetic field which is perpendicular to it, and (iii) current induced in a coil due to its rotation in a magnetic field. 3

ANSWERS

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Name of Student: _____ Class & Sub: _____

Topic of Test: **MAGNETIC EFFECTS OF CURRENT No. 2** Date: _____

1. Name two safely measures commonly used in electric circuits and appliances. 1
2. How is the magnetic field at the centre of a current carrying circular coil depends on number of turns in the coil? 1
3. The current is seen to flow clockwise on one face of a solenoid. What is the polarity of this face? 1
4. If the direction of current flowing through a freely suspended solenoid coil is reversed, what will happen? 1
5. An electron is moving along X-axis and the magnetic field is along Y-axis. What is the direction of magnetic force on the electron? 1
6. What is electromagnetic induction? 1
7. Name a device which gives direct current. 1
8. How does the magnetic field due to a current carrying conductor vary at a point, when the point is moved away from the wire? Why? 2
9. How does the magnetic field due to a current carrying conductor vary with amount of current flowing through the conductor? Why? 2
10. State the principle of an electric generator. 2
11. How can you prepare an electromagnet? 2
12. On what factors does the magnitude of force experienced by a current carrying conductor placed normally in a magnetic field depend? 2
13. A stationary charge is placed in a magnetic field. Will it experience a force? Why? 2
14. What are DC and AC? State the differences between them. 2
15. An alternating electric current has a frequency of 50 Hz. How many times does it change its direction in one second? 2
16. What will be the frequency of an alternating current, if its direction changes after every 0.01 seconds? 2
17. What is short-circuiting of a circuit? What is its possible cause? 2
18. How does the concentric circles representing the magnetic field around a current carrying straight wire change as one moves away from it? On what factors does the magnetic field produced at the centre of a current carrying circular loop depend? 3

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M.M.-35

Name of Student: _____ Class & Sub: _____

Topic of Test: **MAGNETIC EFFECTS OF CURRENT No. 3** Date: _____

1. What are commonly used colours for insulations of live, neutral and earth wires? 1
2. What potential difference is maintained between the live wire and neutral wire? 1
3. What is the most important characteristic of a fuse wire? 1
4. In one complete cycle of AC, how many times the direction of current changes? 1
5. What is the frequency of AC being supplied in our houses? 1
6. Which material is generally used to prepare a good fuse wire? 1
7. What capacity fuse wire is used in lighting circuits? 1
8. What capacity fuse wire is used in power circuit designed for operating refrigerator, geyser or an immersion heater? 1
9. Where do we connect a fuse: with live wire or with neutral wire? 1
10. What is the function of an earth wire? 1
11. What is the function of a galvanometer? 1
12. Insulated copper wire is used as the live wire in domestic electric circuits. Why? 1
13. What are magnetic field lines? State their significance. 2
14. Can two magnetic field lines intersect each other? Why? 2
15. A current through a horizontal power line flows in east to west direction. What is direction of magnetic field at a point directly below & a point directly above it? 2
16. Why does a current carrying solenoid coil, when suspended freely, rests along the north-south direction? 2
17. Draw the lines of force of the magnetic field through and around a single loop of wire carrying electric current. 2
18. State two ways by which the strength of an electromagnet can be increased? 2
19. Demonstrate that due to motion of a magnetic near a solenoid coil an induced current is set up in the coil/Describe an activity to show the phenomenon of electromagnetic induction. 2
20. What is an electric fuse? Briefly describe its function. 2
21. How will the magnetic field around a current carrying straight conductor be affected on:
 - (a) Increasing the current through the conductor?
 - (b) Changing the direction of flow of current in the conductor? 2
22. An electric oven of 2 KW rating is operated in a domestic electric circuit (220 V) that has a current rating of 5 A. What result do you expect? Explain. 2
23. A circuit has a fuse of 5 A. What is maximum number of 50 watt bulbs (220 V) can be safely used in the circuit? 3

ANSWERS