



PHYSICS

BOOKS - ICSE

ELECTRICITY AND MAGNETISM

Topic 1 Electric Circuit 2 Marks Questions

1. State the purpose of using the following in an electric circuit.

Ammeter



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2. State the purpose of using the following in an electric circuit.

Rheostat



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3. What amount of work of work in needed in moving 2C Charge through a potential difference of 8V.



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4. Calculate the current flowing through a wire of resistance 7.5Ω connected to a battery of potential difference 1.5 V .



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5. n electrons flow through a cross section of a conductor in time t . If charge on an electron is e , then write an expression for the current in the conductor.



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6. Name the instrument used to measure the current in an electric circuit.



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7. In transferring 1.5 C charge through a wire, 9 J of work is needed. Find the potential difference across the wire.



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8. A cell of potential difference 12 V is connected to a bulb. The resistance of filament of bulb when it glows is $24\ \Omega$. Find the current drawn from the cell.



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9. A bulb draws current 1.5 A at 6.0 V . Find the resistance of filament of bulb while glowing.



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10. What do you understand by the term resistance? What is its S.I unit ?



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11. "The resistance of a wire is 1 ohm". Explain the statement.



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12. Explain the concept of electric potential difference in terms of work done in transferring the charge.



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13. Name the following.

SI unit of potential difference



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14. Define Resistance. Give its S.I. unit.



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15. State Ohm's law.



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16. How is the current flowing in a conductor changed if the resistance of conductor is

doubled keeping the potential difference across it the same ?



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17. How is the resistance of a wire affected if its (a) length is doubled, (b) radius is doubled ?



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18. How is the resistance of a wire affected if its (a) length is doubled, (b) radius is doubled ?



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19. State whether the resistance of filament of a bulb will decrease, remain unchanged or increase when it glows.



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20. State two ways to save energy.



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21. How does proper insulation of home save energy ?



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22. Which of the following devices is most efficient for lighting purpose :

LED, CFL, Fluorescent tube light, Electric bulb.



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23. State two differences between a conductor and an insulator of electricity.



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Topic 1 Electric Circuit 3 Marks Questions

1. What is a secondary cell ? Name one such cell.



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2. Give one example of a secondary cell



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3. How is a primary cell different from a secondary cell?



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4. Describe three ways for the efficient use of energy



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5. What is meant by the efficient use of energy.
State the full form of I.E.A.




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6. (a) How is the direction of flow of current between the two charged conductors determined by their potentials?

(b) Fig. below shows two conductors A and B.

Their charges and potentials are given in diagram.

State the direction of (i) flow of electrons and (ii) flow of current, when both the conductors are  joined by a metal wire.



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7. State the factors affecting the resistance of a conductor.



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8. Distinguish between conductors and insulators of electricity. Give two examples of each.



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9. Distinguish between a closed circuit and an open circuit, with the use of suitable labelled diagrams.

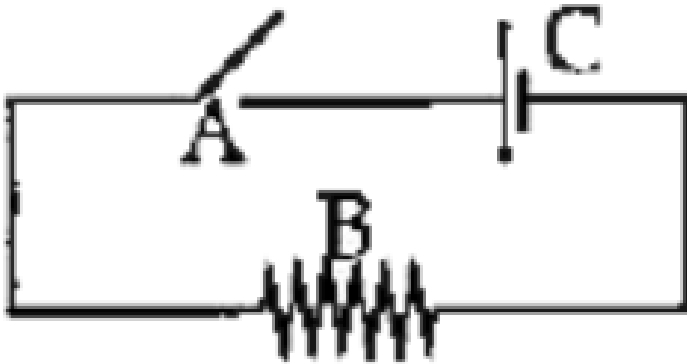


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Topic 1 Electric Circuit 4 Marks Questions

1. Study the diagram below and (i) Identify the electrical components labeled A,B, and C (ii) State whether the circuit given below is open

or closed.



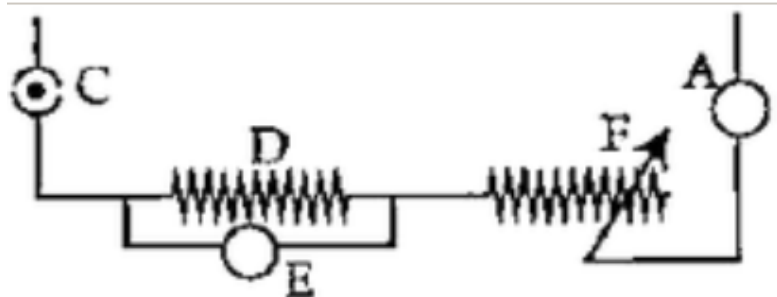
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2. State the factors affecting the resistance of a conductor.

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3. In the electric circuit shown in Fig., label the parts A, B, C, D, E, and E

State the function of each part. Show in the diagram the direction of flow of current.



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4. Write symbols and state functions of each of the following components in an electric

circuit : (i) key, (ii) cell, (iii) rheostat, (iv) ammeter, and (v) voltmeter.



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5. Write symbols and state functions of each of the following components in an electric circuit : (i) key, (ii) cell, (iii) rheostat, (iv) ammeter, and (v) voltmeter.



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6. State the purpose of using the following in an electric circuit.

Rheostat



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7. Write symbols and state functions of each of the following components in an electric circuit : (i) key, (ii) cell, (iii) rheostat, (iv) ammeter, and (v) voltmeter.



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8. Write symbols and state functions of each of the following components in an electric circuit : (i) key, (ii) cell, (iii) rheostat, (iv) ammeter, and (v) voltmeter.



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9. (a) Complete the circuit given in Fig. by inserting between the terminals A and C. an ammeter.

(b) In the diagram, mark the polarity at the

terminals of ammeter and indicate clearly the direction of flow of current in the circuit when the circuit is complete.

(c) Name and state the purpose of R_h in the circuit.



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Topic 2 Magnetism 2 Marks Questions

1. A freely suspended magnet aligns in the North-South direction.



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2. You are given two identical bars, one of which is magnetised. How will you select the magnetised bar?



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3. You are given a magnetised bar and a compass needle. How will you mark polarity at the ends of the bar ?



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4. What is a natural magnet ? State two limitations of a natural magnet.



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5. What is an artificial magnet ? State two reasons why do we need artificial magnets.



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6. Explain the term induced magnetism.



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7. Explain the mechanism of attraction of iron nails by a magnet when brought near them.



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8. A small iron bar is kept near the north pole of a bar magnet. How does the iron bar acquire magnetism ? Draw a diagram to show the polarity on the iron bar. What will happen if the magnet is removed ?



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9. Induced magnetism is temporary'. Comment on this statement.



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10. Induction precedes attraction'. Explain the statement.



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11. What do you understand by the term magnetic field lines ?



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12. Why don't two magnetic lines of force intersect each other?



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13. State two evidences of the existence of earth's magnetic field.



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Topic 2 Magnetism 3 Marks Questions

1. The diagram below shows pins suspended from the same magnet to their maximum limit in two different cases. State with a reason whether the set of pins A or the set of pins B

are made of soft iron. Also define the magnetic process which enables us to suspend the pins one below the other.



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2. A horse shoe magnet has two iron needles attached at its ends. Show on a diagram the positions occupied by the needles and name the phenomenon which comes into play.



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3. State two evidences of the existence of earth's magnetic field.



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4. In following figure, draw at least two magnetic field lines between the two magnets.

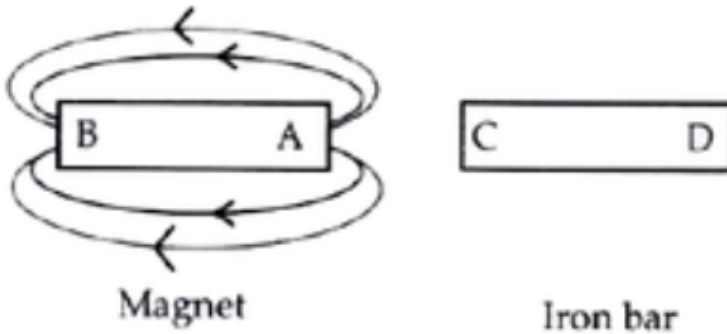


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Topic 2 Magnetism 4 Marks Questions

1. (i) Define a neutral point.

(ii) In the diagram below AB is a magnet and CD is an iron bar.



Study the diagram and determine the polarities at the ends A,B and D.



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2. State the positions of neutral points when a magnet is placed with its axis in the magnetic meridian and with its north pole pointing towards the geographic south.



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3. State four properties of magnetic field lines.



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4. Explain the method of plotting magnetic field lines by using a small compass needle.



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5. (a) Draw the pattern of magnetic field lines near a bar magnet placed with its North Pole pointing towards the geographic North. Indicate the position of neutral points by marking X.

(b) State whether the magnetic field lines in

part (a) represent a uniform magnetic field or non uniform magnetic field?



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6. Fig. shows a bar magnet placed on the table top with its north pole pointing towards south. The arrow shows the north south direction. There are no other magnets or magnetic materials nearby.

(a) Insert two magnetic field lines on either side of the magnet using arrow head to show

the direction of each field line.

(b) Indicate by crosses, the likely positions of the neutral points.

(c)What is the magnitude of the magnetic field at each neutral point?

Give a reason for your answer.



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