**Chapter 13**

**Magnetic Effects of Electric Current**

**(**Deleted topics- Electric generator, Direct Current, Alternate Current, Frequency of AC, Advantage of AC over DC, Domestic electric circuit)

1. Magnetic field on the left side of a straight current –carrying power is pointed upward. What will be the direction of the magnetic field on its right side?
2. When is force experienced by a current carrying conductor placed in magnetic field the largest?
3. Why does a current –carrying conductor suspended in a magnetic field experience a mechanical force?
4. Write one application of Fleming’s left hand rule.
5. A current is flowing upward direction on the plane of paper. Find the direction of magnetic field at A and B

**A B**

1. A student performs an experiment to study the magnetic effect of current around a current carrying straight conductor. He reports that
2. The direction of deflection of North pole of a compass needle kept at a given point near the conductor remains unaffected even when the terminals of battery sending the current in the wire get interchanged.
3. For a given battery, the degree of deflection of N-pole decreases when compass is kept at a point farther away from the conductor.

Which of the above observations of the student is incorrect and why?

1. A magnetic compass needle is placed in the plane of paper near point A as shown in the figure. In which plane should a straight carrying conductor be placed

so that it passes through A and there is no change in the deflection A of the compass? Under which condition is the deflection maximum S

and why?

1. State any 3 characteristics of magnetic force.
2. What is Maxwell’s cork-screw rule? For what purpose is it used?
3. State the Ampere’s swimming rule?
4. Ram draws magnetic field lines of field close to axis of a current carrying circular loop. As she moves away from the centre of the circular loop she observes that lines keep on diverging. How will you explain her observation?
5. Find the direction of magnetic field due to a current carrying coil held
6. Vertically in north-south plane and an observer looking it from east sees the current to flow anticlockwise direction.
7. Vertically in east-west plane and an observer looking it from the south sees the current to flow in anticlockwise direction.
8. Horizontally and an observer looking at it from below sees current to flow in clockwise direction.
9. Explain with help of a labelled diagram the distribution of magnetic field due to current through a circular loop. If a current carrying coil has n turns, the field produced at any point is n times as a large as that produced by single turn. Why?
10. What does divergence of magnetic field lines near the ends of a current carrying straight solenoid indicate?
11. What is a solenoid? Draw a pattern of magnetic field lines of
12. A current carrying solenoid and
13. A bar magnet
14. List 2 differences between the two fields.
15. Draw a labelled circuit diagram of a simple electric motor and explain its working. In what way these simple motors different from electric motors?
16. Name 4 appliances where electric motor, a rotating device that converts electrical energy to mechanical energy is used as important component. In what respect motor is different from generator?
17. State the rule to determine the direction of
18. Magnetic field produced around a straight conductor carrying current
19. Force experienced by current –carrying straight conductor placed in magnetic field which is perpendicular to it.
20. Current induced in a coil due to its rotation in a magnetic field.
21. Multiple choice questions
22. An electric motor
23. Provides a constant potential difference b) measures electric current c) measures potential difference d) converts electric energy to kinetic energy
24. An alpha particle projected towards West is deflected towards north by magnetic field. Then the direction of magnetic field is towards
25. South b) east c) downward d) upward
26. What is not true about poles of magnet?
27. Poles exist always in pair b) poles of magnet are always unlike c) poles of magnet are of equal strength d) Poles are situated a little outwards from the geometrical ends of magnet.
28. The shape of the field lines of magnetic field around a straight conducting wire is
29. Square b) circular c) elliptical d) pyramidal
30. The magnetic field lines inside a current carrying solenoid are
31. Circular b) circular, but they do not cross each other c) along the axis and parallel to each other d) all of these
32. Assertion and Reasons
33. If both assertion and reason are true and reason is the correct explanation of the assertion.
34. If both assertion and reason are true but reason is not correct explanation of the assertion.
35. If assertion is true but reason is false
36. If assertion is false but reason is true.
37. Assertion: An alternating current shows magnetic effect.

Reason: Alternating current varies with time.

1. Assertion: Iron fillings arrange themselves in a definite pattern when sprinkled around a magnet.

Reason: Each piece of iron fillings becomes a small magnet and experience force in a certain direction in magnetic field e to magnet.

1. Assertion: When magnetic field is represented by concentric circular field lines, the current will be a straight line.

Reason: According to Fleming’s left hand rule direction of force is parallel to the current.

1. Assertion: If a bar magnet is cut into pieces each piece behaves as a complete magnet.

Reason: Magnetic poles always exist in pairs. The pole of magnet cannot be separated.

1. Assertion: Magnetic field is not associated with stationary charge.

Reason: A magnetic field is detected by means of its effect on a current carrying conductor,

**Chapter 14**

**Sources of Energy**

**(**The whole chapter deleted. Topic deleted- Different forms of energy, Conventional and non- conventional sources of energy, fossil fuels, solar energy, biogas, wind, water and tidal energy, Nuclear energy, Renewable and non-renewable source of energy)

1. What type of nuclear reaction is responsible for liberation of energy in the sun?
2. What is solar constant?
3. Explain the term ‘hot spots’ in the context of geo-thermal energy production.
4. Why is tidal energy not likely to be potential source of energy?
5. What is the role of a plane mirror and glass sheet in a solar cooker?
6. Mention 3 advantages of the solar cell.
7. Nuclear power is an excellent non-conventional source of energy. Still is not commonly used for power generation. Why? State 3 reasons.
8. What is function of moderator?
9. Differentiate between energy obtained by burning fossil fuels and that obtained as solar energy.
10. Explain the process and principle of ocean thermal energy into electricity.
11. Why is there need for harnessing non-conventional source of energy? How can energy from sea be harnessed in different ways?
12. Read the passage and answer the questions based on it

In some areas, hot magma swells up into the crust, but remains trapped below the surface of the earth. Such areas in the earth’s crust are called hot spots. The rocks and ground water above the hot spots get heated. At some places the hot water comes to the surface and collects in the pools called hot springs. In some cases water gets converted to steam.

1. What is energy coming from the steam coming from hot spot known?
2. Name any country that has power plant based on geothermal energy.
3. Why is bio-gas a better fuel than animal dung?
4. Differentiate nuclear fission from fusion.
5. Explain the working and principle of wind mill.
6. Differentiate renewable source of energy from non-renewable source.
7. Multiple choice question
8. Alpha particles are
9. Negatively charged b) electrons c) protons d) helium nucleus
10. Out of the following which fuel has least calorific value?
11. Petrol b) Wood c) Diesel d) Coal
12. An atom bomb is based on the principle of
13. Nuclear fission b) nuclear fusion c) the liquid drop model d) none of the above
14. To work properly, wind electric generators need wind speed of at least about
15. 1.5km/h b) 15km/h c) 150 km/h d) 1500km/h
16. The energy available due to difference in the temperature of water at the surface of ocean and at deeper levels is known as
17. Tidal energy b) wind energy c) solar energy d) none of the above
18. Assertion and Reason
19. If both assertion and reason are true and reason is correct explanation of the assertion.
20. If both assertion and reason are true but reason is not correct explanation of the assertion.
21. If assertion is true but reason is false.
22. If assertion is false but reason is true.
23. Assertion: Sun is the renewable source of energy.

Reason: Energy in the sun is due to nuclear fission.

1. Assertion: Renewable sources of energy are also called in exhaustible source of energy.

Reason: Non-exhaustible source of energy do not get exhausted by normal human activity.

1. Assertion: Wind energy is an environment friendly and efficient source of energy.

Reason: Wind energy farm can be established everywhere.

1. Assertion: The thermal plants are set up near coal or oil fields.

Reason: Transmission of energy is more efficient than transporting coal or petroleum.

1. Assertion: Nuclear fusion reaction is source of energy in the sun and other stars.

Reason: The cause of large amount of heat energy in the sun is due to fusion of hydrogen nuclei to form helium nuclei.