7th Science Lesson 8 Questions in English

8] Electricity

1. In which year Thomas Alva Edison lightened up the New York city?

a) 1889
b) 1882
c) 1892
d) 1922

Explanation

In **1882, when it was sun set in the west that miracle happened in New York city**. When Thomas Alva Edison gently pushed the switch on 14,000 bulbs in 9,000 houses suddenly got lighted up. It was the greatest invention to mankind. From then the world was under the light even in the night.

2. Where was the 1st thermal power plant commissioned in India?

a) Madras
b) Calcutta
c) Bombay
d) Bangalore

Explanation

Many countries began using electricity for domestic purposes. Seventeen years after the New York, in 1899 electricity first came to India. The **Calcutta Electric Supply Corporation Limited commissioned the first thermal power plant in India on 17 April 1899**

3. In Madras province were the 1st thermal power station set up?

a) Koodankulam
b) Ennore
c) Basin Bridge
d) Erode

Explanation

Around 1900s, a thermal power station was set up at Basin Bridge in Madras city and power was distributed to the government press, general hospital, electric tramways and certain residential areas in Madras. Today electricity is a common household commodity.

4. Which of the following statement is correct?

1) The nucleus consists of protons and neutrons
2) Negatively charged electrons revolve around the nucleus in circular orbits

3) Neutrons have no charge
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

The centre of the atom is called the nucleus. The **nucleus consists of protons and neutrons**. Protons are positively charged. **Neutrons have no charge**. **Negatively charged electrons revolve around the nucleus in circular orbits**. Electricity is a form of energy that is associated with electric charges that exists inside the atom.

5. When getting up from the plastic chair, the___ shirt seems to be stuck to the chair

a) Cotton
b) Wollen
c) Nylon
d) Fabrics

Explanation

Comb your dry hair. Immediately after combing the dry hair, bring the comb closer to the bits of paper. what will you observe? **When you are getting up from the plastic chair, the nylon shirt seems to be stuck to the chair and make crackling sound**. What is the reason for the creation of the sound? A balloon sticks to wall without any adhesive after rubbing on your hand. Do you know the reason for all? In all the above activities, when a body is rubbed against some other body become charged.

6. One unit of coulomb is charge of approximately_____

a) 6.242×10^18 protons
b) 6.242×10^18 electrons
c) 6.242×10^18 neutrons
d) Either a or b

Explanation

Electric charge is measured in a unit called coulomb. **One unit of coulomb is charge of approximately 6.242×10^18 protons or electrons**. Electrical charges are generally denoted by the letter `q`.

7. Which of the following statement is correct?

1) The flow of electric charges constitutes an electric current
2) The conventional symbol for current is 'I'.

3) An electric current is measured by the amount of electric charge moving per unit time per unit time at any point in the circuit
   a) 1, 2
   b) 1, 3
   c) 2, 3
   d) All the above

Explanation

The flow of electric charges constitutes an electric current. For an electrical appliance to work, electric current must flow through it. **An electric current is measured by the amount of electric charge moving per unit time at any point in the circuit. The conventional symbol for current is 'I'.**

8. Which of the following about Electric Current is correct?

a) I = q / t
b) I = q .t
c) I = q^ t
d) q = I / t

Explanation

The SI unit for measuring an electric current is the ampere, which is the flow of electric charge across a surface at the rate of one coulomb per second.

I = q / t

Where I ⇒ current (in Ampere - A) q ⇒ charge (in coulomb - c) t ⇒ time taken (in seconds - s)

9. If 30 coulomb of electric charge flows through a wire in two minutes, calculate the current?

a) 25 A
b) 2.5 A
c) 0.25 A
d) 22.5 A

Explanation

Charge (q) = 30 coulomb

Time (t) = 2 min x 60s = 120 s

Current I = q/t = 30C/120s = 0.25 A

10. Which of the following statement is incorrect?

1) Before the discovery of electrons, scientists believed that an electric current consisted of moving positive charges.
2) This movement of positive charges is called conventional current
    a) 1 alone
    b) 2 alone
    c) 1, 2
    d) None

Explanation

Before the discovery of electrons, scientists believed that an electric current consisted of moving positive charges. This movement of positive charges is called **conventional current**

11. Which of the following statement is correct?

1) After the electrons were discovered, it was known that electron flow actually takes place from the negative terminal to the positive terminal of the battery
2) This movement is known as electron flow
3) Conventional current is in the direction opposite to electron flow.
    a) 1, 2
    b) 2, 3
    c) 1, 3
    d) All the above

Explanation

After the electrons were discovered, it was known that electron flow actually takes place from the negative terminal to the positive terminal of the battery. This movement is known as electron flow. **Conventional current is in the direction opposite to electron flow**.

12. Electric current is measured using a device called_____

a) Wattmeter
b) Voltmeter
c) Ammeter
d) Galvanometer

Explanation

Electric current is measured using a device called ammeter. The terminals of an ammeter are marked with + and - sign. An ammeter must be connected in series in a circuit.

13. 1 milliampere (mA) =

a) 1/10000 ampere
b) 1/1000 ampere

c) 1/100 ampere
d) 1/1000000 ampere

Explanation

Instruments used to measure smaller currents, in the milli ampere or micro ampere range, are designated as milli ammeters or micro ammeters.

1 milliampere (mA) = 10^{-3} ampere.
= 1/1000 ampere
1 microampere (μA) = 10^{-6} ampere
= 1/1000000 ampere

14. If 0.002A current flows through a circuit, then convert the current in terms of micro ampere?

a) 2000 μA
b) 200 μA
c) 2 μA
d) 2000 mA

Explanation

Given that the current flows through the circuit is 0.002A

We know that 1 A = 106 μA

0.002A = 0.002 × 106 μA

= 2 × 10-3 × 106 μA

= 2 × 103 μA

0.002A = 2000 μA

15. Assertion: An electric charge always flows from a point at higher potential to a point at lower potential.

Reason(R): The potential difference between any two points in the circuit is the amount of energy needed to move one unit of electric charge from one point to the other.

a) Both (A) and (R) are correct, but (R) does not explain (A)
b) Both (A) and (R) are wrong
c) Both (A) and (R) are correct and (R) explains (A)

d) (A) is Correct and (R) is wrong

Explanation

Electrical charges need energy to push them along a circuit. Water always flows from higher to lower ground. Similarly, an electric charge always flows from a point at higher potential to a point at lower potential. An electric current can flow only when there is a potential difference (V) or P.D. The potential difference between any two points in the circuit is the amount of energy needed to move one unit of electric charge from one point to the other.

16. The SI unit of potential difference is_____

a) Kwh
b) V
c) A/s
d) Watt

Explanation

The term mentioned in the board volt is the measurement for the electric potential difference. **The SI unit of potential difference is volt (V)**. potential difference between two points is measured by using a device called voltmeter.

17. Which of the following statement is correct?

1) An electrical component resists or hinders the flow of electric charges, when it is connected in a circuit.
2) The lower the resistance in a component, the higher the potential difference needed to move electric charge through the component
3) Resistance of a component is the ratio of the potential difference across it to the current flowing through it
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

An electrical component resists or hinders the flow of electric charges, when it is connected in a circuit. In a circuit component, the resistance to the flow of charge is similar to how a narrow channel resists the flow of water. **The higher the resistance in a component, the higher the potential difference needed to move electric charge through the component**. We can express resistance as a ratio. Resistance of a component is the ratio of the potential difference across it to the current flowing through it

V = I/ R

18. The S.I unit of resistance is____

a) A
b) Ohm
c) Volt
d) Watt/s

Explanation

Resistance of a component is the ratio of the potential difference across it to the current flowing through it. The **S.I unit of resistance is ohm.** Greater the ratio of V to I, the greater is the resistance.

19. The S.I Unit of electrical conductivity is_____

a) Siemens
b) Siemens/s
c) Siemens/m
d) ohm-metre

Explanation

Electrical conductivity or specific conductance is the measure of a material's ability to conduct an electric current. It is commonly represented by the Greek letter σ (sigma). **The S.I Unit of electrical conductivity is Siemens/meter(S/m).**

20. Which of the following statement is correct?

1) Electrical resistivity is a fundamental property of a material that quantifies how strongly that material opposes the flow of electric current
2) The SI unit of electrical resistivity is the ohm/metre
    a) 1 alone
    b) 2 alone
    c) 1, 2
    d) None

Explanation

Electrical resistivity (also known as specific electrical resistance, or volume resistivity) is a fundamental property of a material that quantifies how strongly that material opposes the flow of electric current. **The SI unit of electrical resistivity is the ohm-metre (Ω.m)**.

21. Match the following with their Resistivity:

I.	Silver	1. 1.72x10^-8
II.	Annealed Copper	2. 1.59x10^-8

III.	Copper	3. 1.68x10^-8
IV.	Aluminium	4. 2.82x10^-8

a) **2, 1, 3, 4**
b) 2, 1, 4, 3
c) 2, 3, 1, 4
d) 3, 1, 2, 4

Explanation

Material	Resistivity (ρ) (Ω m) at 20°C	Conductivity (σ) (S/m)at 20°C
Silver	$1.59x10^{-8}$	$6.30x10^{7}$
Copper	$1.68x10^{-8}$	$5.98x10^{7}$
Annealed Copper	$1.72x10^{-8}$	$5.80 x10^{7}$
Aluminum	$2.82x10^{-8}$	$3.5x10^{7}$

22. Match the following

I.	Pump	1. Resistance
II.	Pressure	2. Battery
III.	Some dust and rust that plug up the pipe	3. Voltage generated by battery
IV.	Wire	4. Pipe

a) 4, 2, 1, 3
b) 2, 3, 1, 4
c) 1, 4, 3, 2
d) 1, 2, 4, 3

Explanation

Water flowing through pipes is pretty good mechanical system that is a lot like an electrical circuit. This mechanical system consists of a pump pushing water through a closed pipe. Imagine that the electrical current is similar to the water flowing through the pipe. The following parts of the two systems are related:

- The **pipe is like the wire in the electric circuit and the pump is like the battery**
- The **pressure generated by the pump drives water through the pipe**.
- The **pressure is like the voltage generated by the battery** which drives electrons through the electric circuit
- Suppose, there are some dust and rust that plug up the pipe and slow the flow of water, creating a pressure difference from one end to the other end of the pipe. In similar way, the resistance in the electric circuit resists the flow of electrons and creates a voltage drop from one end to the other. Energy loss is shown in the form of heat across the resistor.

23. Which of the following statement is correct?

1) Electric cell converts chemical energy into electrical energy
2) Electric cells have two terminals.
3) In addition to electro chemical, we use electro thermal source for generating electricity for large scale use
    a) 1, 2
    b) 2, 3
    c) 1, 3
    d) All the above

Explanation

The sources which produce the small amount of electricity for shorter periods of time is called as electric cell or electro chemical cells. Electric cell converts chemical energy into electrical energy. **In addition to electro chemical, we use electro thermal source for generating electricity for large scale use**. **It has two terminals**. When electric cells are used, a chemical reaction takes place inside the cells which produces charge in the cell.

24. Which of the following statement about primary cell is correct?

1) The dry cell commonly used in torches
2) It can be recharged after use.
    a) 1 alone
    b) 2 alone
    c) 1, 2
    d) None

Explanation

The dry cell commonly used in torches is an example of a primary cell. It cannot be recharged after use.

25. Which of the following are examples of Secondary cells?

1) Lithium cylindrical cells
2) Button cells
3) Alkaline cells
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

Secondary cells are used in automobiles and generators. The chemical reaction in them can be reversed, hence they can be recharged. **Lithium cylindrical cells, button cells and alkaline cells are the other types that are in use**.

26. Which of the following are examples of primary cell?

1) Lead accumulator
2) Daniel cell
3) Lechlanche cell
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

PRIMARY CELL
1. The chemical reaction inside the primary cell is irreversible
2. It cannot be recharged.
3. Examples of secondary cells are lead accumulator, Edison accumulator and Nickel – Iron accumulator.
4. Examples- simple voltalic cell, Daniel cell, and lechlanche cell and dry cell

27. Which of the following statement about secondary cell is correct?

1) The chemical reaction inside the secondary cell is reversible
2) It is used to operate devices such as mobile phones, cameras, computers, and emergency lights
    a) 1 alone

b) 2 alone
c) 1, 2
d) None

Explanation

SECONDARY CELL
The chemical reaction inside the secondary cell is reversible
It can be recharged
It is used to operate devices such as mobile phones, cameras, computers, and emergency lights.
Examples of secondary cells are lead accumulator, Edison accumulator and Nickel – Iron accumulator.

28. Which of the following statement about dry cell is correct?

1) It is a convenient source of electricity available in portable and compact form.
2) It was developed in 1887 by Yei Sakizo of Japan

a) 1 alone
b) 2 alone
c) 1, 2
d) None

Explanation

A dry cell is a type of chemical cell commonly used in the common form batteries for many electrical appliances. **It is a convenient source of electricity available in portable and compact form. It was developed in 1887 by Yei Sakizo of Japan**.

29. Which of the following act as electrolyte in dry cell?

a) **Ammonium chloride**
b) Hydrochloric acid
c) Sulphuric acid
d) Phosphoric acid

Explanation

A dry cell is a portable form of a leclanche cell. It consists of zinc vessel which acts as a negative electrode or anode. The vessel contains a moist paste of saw dust saturated with a solution of ammonium chloride and zinc chloride. **The ammonium chloride acts as an electrolyte**.

30. Which of the following statement about dry cell is correct?

1) The purpose of zinc chloride is to maintain the moistness of the paste being highly hygroscopic
2) The carbon rod covered with a brass cap is placed in the middle of the vessel. It acts as positive electrode or cathode.
3) The chemical action inside the cell is the same as in leclanche cell
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

The purpose of zinc chloride is to maintain the moistness of the paste being highly hygroscopic. The carbon rod covered with a brass cap is placed in the middle of the vessel. It acts as positive electrode or cathode. It is surrounded by a closely packed mixture of charcoal and manganese dioxide (MnO_2) in a muslin bag. Here MnO_2 acts as depolarizer. The zinc vessel is sealed at the top with pitch or shellac. A small hole is provided in it to allow the gases formed by the chemical action to escape. **The chemical action inside the cell is the same as in leclanche cell**.

31. Electrolyte in the dry cell is_____ in nature

a) Solution
b) Gas
c) Paste
d) Solid

Explanation

The dry cell is not really dry in nature but the quantity of water in it is very small, as the **electrolyte is in the form of a paste**. In other cells, the electrolyte is usually a solution.

32. Which of the following statement is correct?

1) Batteries are a collection of one or more cells whose chemical reactions create a flow of electrons in a circuit
2) Electrolyte is a substance that chemically reacts with the anode and cathode
3) All batteries are made up of three basic components: anode, cathode, electrolyte
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

Batteries are a **collection of one or more cells whose chemical reactions create a flow of electrons** in a circuit. All batteries are made up of three basic components: an anode (the '+' side), a cathode (the '–' side), and some kind of electrolyte. **Electrolyte is a substance that chemically reacts with the anode and cathode.**

33. Who was related with Galvani theory?

a) Luigi Galvani
b) Einstein
c) Newton
d) Cooper

Explanation

One fateful day in 1780, Italian physicist, physician, biologist, and philosopher, **Luigi Galvani, was dissecting a frog attached to a brass hook. As he touched the frog's leg with an iron scapel, the leg twitched. Galvani theorized** that the energy came from the leg itself, but his fellow scientist, Alessandro Volta, believed otherwise.

34. Who is often attributed to invention of the modern battery?

a) Alessandro Volta
b) Luigi Galvani
c) George Siemen ohm
d) Newton

Explanation

The **invention of the modern battery is often attributed to Alessandro Volta**. It actually started with a surprising accident involving the dissection of a frog.

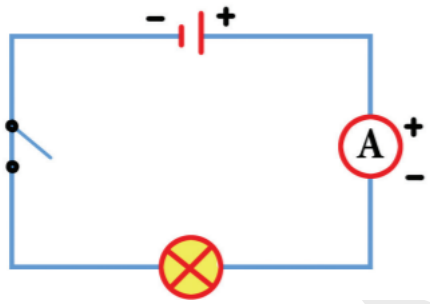
35. In a cell, the longer line denotes the_____

a) Positive
b) Negative

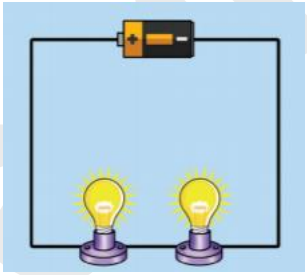
c) Neutral
d) None

Explanation

In a cell, the longer line denotes the positive (+) terminal and the short line denotes the negative (-) terminal. We shall use these symbols to show components in the circuits we draw. Such diagrams are called circuit diagrams.



36. The following figure is a:

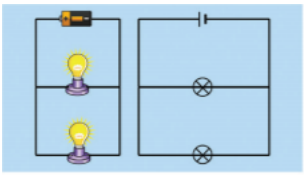


a) Open circuit
b) Parallel circuit
c) Series circuit
d) Mixed circuit

Explanation

Two kinds of circuits can be made with two bulbs and a cell. In this experiment we shall make one of them and study it. Look at the circuit with two bulbs, and a cell and a switch given here (Figure). It is clear from the circuit diagram, that the two bulbs are connected one after the other. The circuit diagram shows the sequence of the bulbs and cell, not their real position. **The way in which the bulbs have been connected in this circuit is called series connection**.

37. The following figure is a:



a) Open circuit
b) Parallel circuit
c) Series circuit
d) Mixed circuit

Explanation

Figure - shows a circuit in which two bulbs are connected in different places. This is a second type of circuit. **Two bulbs in this circuit are said to be connected in parallel** and such circuits are called parallel circuits.

38. Which of the following statement is correct?

1) An atom, in turn, contains electrically charged particles
2) Many of these particles are fixed to the atoms but in conductors (such as all metals) there are lots of particles that are not held to any particular atom but are free to wander around randomly in the metal.
    a) 1 alone
    b) 2 alone
    c) 1, 2
    d) None

Explanation

We know that all materials are made up of the basic building block, the 'atom'. An atom, in turn, contains electrically charged particles. **Many of these particles are fixed to the atoms but in conductors (such as all metals) there are lots of particles that are not held to any particular atom but are free to wander around randomly in the metal**. These are called 'free charge'.

39. A short circuit is simply a____ connection between the two conductors supplying electrical power to any circuit

a) High resistance
b) Low resistance
c) Open circuit
d) Closed circuit

Explanation

You might have observed the spark in the electric pole located nearby your house. Do you know the cause of this electric spark? This is due to the short circuiting of electricity along its path. **A short circuit is simply a low resistance connection between the two conductors supplying electrical power to any circuit**. Arc welding is a common example of the practical application of the heating due to a short circuit.

40. Which of the following statement is correct?

1) Based on the property of conductance of electricity, substances are classified into two types, namely, Conductors and Insulators
2) The electrons of different types of atoms have different degrees of freedom to move around.
    a) 1 alone
    b) 2 alone
    c) 1, 2
    d) None

Explanation

Based on the property of conductance of electricity, substances are classified into two types, namely, Conductors and Insulators (or) bad conductors of electricity. Electrons of different types of atoms have different degrees of freedom to move around. With some types of materials, such as metals, the outermost electrons in the atoms are loosely bound and they chaotically move in the space between the atoms of that material. Because these virtually unbound electrons are free to leave their respective atoms and float around in the space between adjacent atoms, they are often called as free electrons.

41. Which of the following statement is correct?

1) Conductors are the materials whose atoms have electrons that are loosely bound and are free to move through the material
2) A good conductor has high electrical conductivity
    a) 1 alone
    b) 2 alone
    c) 1, 2
    d) None

Explanation

Conductors are the materials whose atoms have electrons that are loosely bound and are free to move through the material. A material that is a good conductor gives very little resistance to the flow of charge (electron) on the application of external voltage. This flow of charge (electron) is what constitutes an electric current. **A good conductor has high electrical conductivity**.

42. The chip which are used in SIM Cards, Computers, and ATM cards are made up of____

a) Conductors
b) Semiconductors
c) Insulators
d) None

Explanation

The **chip which are used in SIM Cards, Computers, and ATM cards are made up of semiconductors** namely, silicon and germanium because of their electrical conductivity lies between a conductor and an insulator.

43. Assertion(A): Rubber is a insulator, it is a non-conductor of electricity.

Reason(R): The rubber eraser does not allow electric current to pass through it

a) Both (A) and (R) are correct, but (R) does not explain (A)

b) Both (A) and (R) are wrong

c) Both (A) and (R) are correct and (R) explains (A)

d) (A) is Correct and (R) is wrong

Explanation

An insulator gives a lot of resistance to the flow of charge (electron). During the drift of the electrons in an object when an external voltage is applied, collisions occur between the free electrons and the atoms of the material also affect the movement of charges. These collisions mean that they get scattered. It is a combination of the number of free electrons and how much they are scattered that affects how well the metal conducts electricity. **The rubber eraser does not allow electric current to pass through it. So, rubber is a non-conductor of electricity. Rubber is an insulator.**

44. Which of the following statement is correct?

1) Wires made of copper, an electrical conductor, have very low resistance.
2) These wires are in turn enclosed in electrical insulators, or materials of high electrical resistance.
3) These materials are usually made of flexible plastic.
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

Wires made of copper, an electrical conductor, have very low resistance. Copper wires are used to carry current in households. These **wires are in turn enclosed in electrical insulators, or materials of high electrical resistance**. **These materials are usually made of flexible plastic**.

45. Which of the following effects does electricity have?

1) Heating effect
2) Magnetic effect
3) Chemical effect
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

The light of the bulb is thus one of the effects of electricity. There are several other important effects of electricity. We shall study some of these effects in this chapter. There are 3 main effects of electricity as,

1. **Heating effect**
2. **Magnetic effect (Magnetism)**
3. **Chemical effect**

46. Which of the following statement is correct?

1) When electric-current passes through a wire, the electrical energy is converted to hear
2) In heating appliances, the heating element is made up of materials with low melting point
3) The electric bulb, geyser, iron box, immersible water heater are based on this effect
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

When **electric current passes through a wire, the electrical energy is converted to hear. In heating appliances, the heating element is made up of materials with high melting point**. An example of such a material is nichrome (an alloy of nickel, iron and chromium). The heating effect of electric current has many practical applications. **The electric bulb, geyser, iron box, immersible water heater are based on this effect**. These appliances have heating coils of high resistance.

47. Which of the following statement is correct?

1) Electric fuse is a safety device which is used in household wiring and in many appliances

2) The fuse wire melts whenever there is overload of the current in the wire
3) In electrical devices, a glass fuse is often used
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

Electric fuse is a safety device which is used in household wiring and in many appliances. Electric fuse has a body made of ceramic and two points for connecting the fuse wire. **The fuse wire melts whenever there is overload of the current in the wire**. This breaks the circuit and helps in preventing damage to costly appliances and to the wiring**. In electrical devices, a glass fuse is often used**. This is a small glass tube, in which lies the fuse wire.

48. Assertion(A): MCBs have been replacing electric fuse from wirings at most of the places

Reason(R): The electric fuse has a big practical problem

a) Both (A) and (R) are correct, but (R) does not explain (A)

b) Both (A) and (R) are wrong

c) Both (A) and (R) are correct and (R) explains (A)

d) (A) is Correct and (R) is wrong

Explanation

MCBs have been replacing electric fuse from wirings at most of the places. The electric fuse has a big practical problem. Whenever the wire fuses, one needs to replace the wire to resume electric supply. More often than not, this proves to be a cumbersome task. Miniature circuit breakers break the circuit automatically. One just needs to switch it on to resume the electric supply. Many models of MCBs have a built-in mechanism by which the electric supply is automatically resumed.

49. Who discovered the Magnetic Effect of electricity?

a) Faraday
b) Hans Christian Oersted
c) Albert Einstein
d) Michel O' Dwyer

Explanation

The next effect of electric current is Magnetism. In 1819, **Hans Christian Oersted discovered the electricity that has a magnetic effect**. The experiment in activity-5 will help you understand the magnetic effect of electric current.

50. Which of the following statement is correct?

1) Magnetic effect of electric current has been used in making powerful electromagnets
2) Electro magnets are used in many appliances that we use in our day to day life, namely, electric bell, cranes and telephone
3) Electromagnets are also used to remove splinters of steel or iron in hospitals dealing with eye injuries
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

Magnetic effect of electric current has been used **in making powerful electromagnets**. Electromagnets are also **used to remove splinters of steel or iron in hospitals dealing with eye injuries**. Electro magnets are used in many appliances that we use in our day to day life, namely, **electric bell, cranes and telephone**.

51. Which of the following statement is correct?

1) In telephones, a changing magnetic effect causes a thin sheet of metal (diaphragm) to vibrate
2) The diaphragm is made up a metal that can be attracted to magnets.
    a) 1 alone
    b) 2 alone
    c) 1, 2
    d) None

Explanation

In telephones, a changing magnetic effect causes a thin sheet of metal (diaphragm) to vibrate. The diaphragm is made up a metal that can be attracted to magnets.

- The diaphragm is attached to spring that is fixed to the earpiece
- When a current-flows through the wires, the soft – iron bar becomes an electromagnet.
- The diaphragm becomes attracted to the electromagnet.
- As the person on the other end of the line speaks, his voice cause the current in the circuit to change. This causes the diaphragm in the earpiece to vibrate, producing sound.

52. Which of the following were invented by Edison?

1) Electric bulb
2) Electric motor
3) Gramophone

4) Kinetoscope
    a) 1, 3, 4
    b) 2, 3, 4
    c) 1, 2, 3
    d) All the above

Explanation

Edison was an American Scientist and Industrialist. He **invented many instruments like Electric bulb, electric motor, gramophone and kinetoscope.** He was known as for taking the world of darkness to brightness crossing all the obstacles in life.

53. For whose death, the light of "Statue of Liberty" in New York was turned off?

a) Einstein
b) Edison
c) Newton
d) Tesla

Explanation

As a mark of respect to Edison on his death, the light of "Statue of Liberty" in New York was turned off. Except the road lights of Chicago and Broadway, all the lights in the city were turned off.

54. _____ wire coil was used by Edison in his first electric bulb

a) Gold
b) Titanium
c) Platinum
d) Silver

Explanation

Thomas Alva Edison invented a commercially viable electric bulb. This was exhibited in 1897. He used **a platinum wire coil in a vacuum glass and discovered the first electric bulb in 1879**.