CBSE Sample Paper-03
SUMMATIVE ASSESSMENT –I
SCIENCE (Theory)
Class – X

Time allowed: 3 hours Maximum Marks: 90

General Instructions:

a) All questions are compulsory.
b) The question paper comprises of two sections, A and B. You are to attempt both the sections.
c) Questions 1 to 3 in section A are one mark questions. These are to be answered in one word or in one sentence.
d) Questions 4 to 6 in section A are two marks questions. These are to be answered in about 30 words each.
e) Questions 7 to 18 in section A are three marks questions. These are to be answered in about 50 words each.
f) Questions 19 to 24 in section A are five marks questions. These are to be answered in about 70 words each.
g) Questions 25 to 27 in section B are 2 marks questions and Questions 28 to 36 are multiple choice questions based on practical skills. Each question of multiple choice questions is a one mark question. You are to select one most appropriate response out of the four provided to you.

Section A

1. Why does a little addition of carbon in iron make it more useful?
2. Name the excretory unit of kidney.
3. Why is tungsten metal selected for making filaments of incandescent lamp bulbs?
4. A calcium compound which is a yellowish white powder is used as a disinfectant and also in textile industry. Name the compound. Which gas is released when this compound is left exposed to air?
5. Name the ovarian hormones and give the function of any one of them.
6. What is the difference between direct and alternating currents? Write one important advantage of using alternating current.
7. Balance the ionic equation:
   (a) $Cu(s) + Ag^{+} \longrightarrow Cu^{2+} + Ag$
   (b) $Al + H^{+} \longrightarrow Al^{3+} + H_2$
   (c) $Fe^{3+} + Cr \longrightarrow Fe^{2+} + Cr^{3+}$
8. Write one equation each for decomposition reactions where energy is supplied in the form of heat, light or electricity.
9. What is meant by refining of metals? Describe the electrolytic refining of copper with a neat labelled diagram.

10. Give reasons:
    (a) Germanium is called a metalloid.
    (b) Zirconium is known as a strategic metal.
    (c) Nitrogen in used to preserve food.
11. State reasons for the following:
    (a) Aluminium oxide is called an amphoteric oxide.
    (b) Sodium and potassium metals are kept immersed under kerosene oil.
    (c) Hydrogen gas is not evolved when most metals react with nitric acid.
12. How are the lungs designed in human beings to maximise the area for exchange of gases?
13. How are fats digested in our bodies? Where does this process take place?
14. Draw a diagram showing endocrine glands in a human male body. Label the following glands on it:
    (a) Pituitary (b) Thyroid (c) Adrenal (d) Testes
15. Two metallic wires A and B are connected in second wire A has length l and radius r, while wire B has length 2l and radius 2r. Find the ratio of total resistance of series combination and the resistance of wire A, if both the wires are of same material?
16. Aslam is a welder by profession who was working at Mohan's house. After making a 'railing' by using electric welding with naked eyes, Aslam was using a grinder on it to smoothen the welding joints. Just them some particles fell into Aslam's eye. He started crying with pain. Mohan hired an auto and took him to an eye hospital, doctor used a device connected to two electric wires to remove the particles form Aslam's eye. Aslam asked Mohan what had fallen into his eye and what device was used by the doctor to remove that particle from the eye. Being a science student of class X, Mohan explained everything to Aslam and asked him to be careful in future.
    Read the above passage and answer the following questions:
    (a) What could be the particle fell into Aslam's eye?
    (b) What device was used by the doctor to remove the particle and how it worked?
    (c) What values are shown by Mohan during this episode?

    [Value Based Question]
17. Explain the difference between nuclear fission and nuclear fusion reaction with examples. Give reason why the energy due to fusion is not being used to meet our day to day energy needs?
18. With the help of a labelled diagram, describe the working of a solar water heater.
19. With the help of an activity, explain that hydrogen and oxygen are released when electric current is passed through water.

Or

(a) Crystal of copper sulphate are heated in a test tube for some time:
    (i) What is the colour of copper sulphate crystals before heating and after heating?
    (ii) What is the source of liquid droplets seen on the inner upper side of the test tube during the heating process?

(b) A metal 'X' when dipped in aqueous solution of aluminium sulphate no reaction is observed whereas when it is dipped in an aqueous solution of ferrous sulphate, the pale green solution turns colourless. Identify the metal 'X' with reason.

20. (i) Define the term alloy and amalgam. Name the alloy used for welding electric wires together. What are its constituents.

(ii) Name the constituents of the following alloys:

(a) Brass (b) Stainless steel (c) Bronze

State one property in each of these alloys, which is different from its main constituents.

Or

What method of concentration of ore is preferred in each of the following cases and why?

(i) The ore has higher density particles interspersed with a large bulk of low density impurities.

(ii) The ore consists of copper sulphide intermixed with clay particles.

(iii) Give an example of amalgam.

21. Describe double circulation in human beings. Why is it necessary?

Or

(i) Name the blood vessel that brings deoxygenated blood to human heart.

(ii) Which chamber of human heart receives deoxygenated blood?

(iii) Explain how deoxygenated blood from this chamber is sent to lungs for oxygenation.

22. (a) Define electrical energy with S.I. unit?

(b) A house hold uses the following electric appliance

(i) Refrigerator of rating 400w for ten hour each day.

(ii) Two electric fans of rating 80w each for twelve hours each day.

(iii) Six electric tubes of rating 18w each for 6hours each day.

Calculate the electricity bill of the household for the month of June if the cost per unit of electric energy is Rs. 3.00.

Or

Explain the following:

(i) Why is the tungsten used almost exclusively for filament of an electric lamp?

(ii) Why are the elements of electric heating devices, such as bread-toaster and electric irons, made of an alloy rather than a pure metal?

(iii) Why is the series arrangement of appliances not used for domestic circuits?

(iv) How does the resistance of a wire vary with its area of cross-section?

(v) Why are copper and aluminium wires usually employed for electric energy transmission?

23. What is electromagnetic induction? Give two methods of inducing electric current in a coil. Explain each method with the help of diagram.

Or

Draw a labelled diagram of domestic circuit. What is the importance of earthing in a circuit?

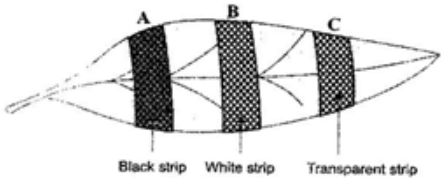
24. State the principle on which an electromagnet works. Describe an activity to make an electromagnet. Give two uses of electromagnet.

Or

Describe an activity to draw magnetic lines of force around a current carrying (a) straight conductor, (b) circular loop.

Section B

25. When red litmus paper is added to limewater, then what will be the change in litmus paper? Give reason. Write the chemical formula of limewater also.
26. A destarched leaf on a potted plant was covered with black (A), white (B) and transparent (C) strips of paper as shown in the figure.

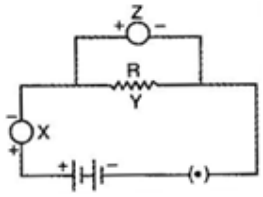


After six hours to exposure to sunlight the leaf was removed from the plant and tested for starch.

(a) What changes will be observed?

(b) Justify your answer.

27. A student draw the following circuit diagram for the experiment on studying the dependence of current (I) on potential difference (V) across a resistor. What are the parts labelled X, Y and Z in this diagram respectively? Justify your answer also.



28. A drop of liquid sample was put on the pH paper, paper turned blue. The liquid sample must be of:

(a) Lemon Juice (b) HCl

(c) Sodium bicarbonate (d) Ethanoic acid

29. When SO_2 gas is passed through acidified $K_2Cr_2O_7$ solution:

(a) The solution becomes green due to formation of K_2SO_4.

(b) The solution becomes green due to formation of $Cr_2(SO_4)_2$.

(c) The solution becomes yellow due to formation of K_2SO_4.
(d) The solution becomes red due to formation of $Cr_2(SO_4)_2$.

30. SO_2 gas should not be inhaled because:
(a) It is poisonous.
(b) It is acidic in nature.
(c) It is lighter than air.
(d) It is pungent smelling.

31. Which hormone brings about development of mammary gland?
(a) Estrogen (b) Progesterone (c) Relaxin (d) Oxytocin

32. Junctions of two neurons in called.
(a) Synapse (b) Synapsis (c) Joint (d) Junction

33. A wire of resistance R is cut into five equal pieces. These pieces are connected in parallel and the equivalent resistances of the combination are R'. Then the ration $\frac{R}{R'}$ is
(a) $\frac{1}{5}$
(b) 5
(c) $\frac{1}{25}$
(d) 25

34. A metallic conductor has loosely bound electrons called free electrons. The metallic conductor is
(a) negatively charged
(b) positively charged
(c) neutral
(d) Either positively charged or negatively charged

35. If the key in the arrangement is taken out (the circuit is made open) and magnetic field lines are drawn over the horizontal plane, the lines are:
(a) concentric circles.
(b) elliptical in shape.
(c) straight lines parallel to each other.
(d) concentric circles near the point O but of elliptical shapes as we go away from it.

36. The main constituent of CNG is
(a) butane
(b) methane
(c) ethane
(d) propane

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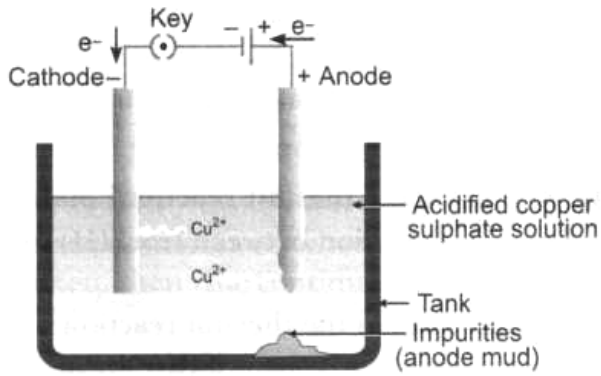
SUMMATIVE ASSESSMENT –I
SCIENCE (Theory)
Class – X

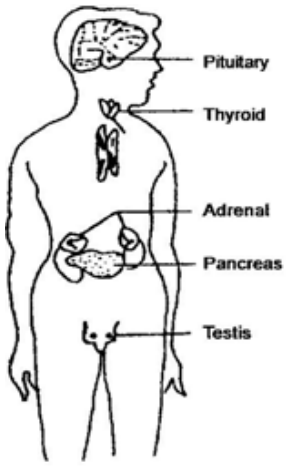
(Solutions)

SECTION-A

1. Pure iron is very soft and stretches easily when hot. When it is mixed with a small quantity of carbon (0.05%), it becomes hard and strong and hence becomes more useful.
2. Nephron.
3. Tungsten metal has high resistivity and high melting point.
4. Bleaching powder (Calcium oxychloride)
   Chlorine gas is released.
   $CaOCl_2 + CO_2 \longrightarrow CaCO_3 + Cl_2$ (g)
5. The hormones secreted by ovaries are estrogen and progesterone.
   At puberty, estrogens stimulate the growth, maturation and functions of female secondary sex organs such as uterus, fallopian tubes and the duct system of mammary glands.
6. **Difference between direct and alternating current:**
   Direct current always flows in one direction only whereas alternating current reverses its direction periodically.
   Advantage of an alternating current:
   Alternating current can be transmitted over a long distances without loss of energy.
7. (a) $Cu(s) + 2Ag^{+} \longrightarrow Cu^{2+} + 2Ag$
   (b) $2Al + 6H^{+} \longrightarrow 2Al^{3+} + 3H_2$
   (c) $3Fe^{3+} + Cr \longrightarrow 3Fe^{2+} + Cr^{3+}$
8. (a) $CaCO_3(s) \xrightarrow{\text{heat}} CaO(s) + CO_2(g)$
   (b) $2AgCl(s) \xrightarrow{\text{Sunlight}} 2Ag(s) + Cl_2(g)$
   (c) $2H_2O(l) \xrightarrow{\text{electricity}} 2H_2(g) + O_2(g)$
9. In electrolytic refining process, the impure metal is made as is anode and a thin strip of pure metal is made as cathode. A solution of the metal salt is made as an electrolyte. On passing the current through the electrolyte, the pure metal from the anode dissolves into the electrolyte. An equivalent amount of pure metal from the electrolyte is deposited on the cathode. The soluble impurities go into the solution, whereas, the insoluble impurities settle down at the bottom of the anode and are known as anode mud.
   At anode: $Cu \rightarrow Cu^{2+} + 2e^{-}$
   At cathode: $Cu^{2+} + 2e^{-} \rightarrow Cu$



10. (a) Germanium shows the properties of both metals and non-metals, therefore, it is regarded as metalloids.
    (b) Zirconium is highly valuable for economy for country as it is very useful in nuclear reactor, therefore it is called a strategic metal.
    (c) Nitrogen prevents food from getting oxidized, therefore, it is used to preserve food.
11. (a) It reacts with both acids as well as bases therefore, it is called amphoteric oxide.
    (b) It is because they are highly reactive and catch fire in moist air.
    (c) It is because nitric acid is strong oxidizing agent
12. Lungs are two soft spongy structures lodged in the thoracic cavity. Each lung is enclosed in a double-walled sac called pleura. In the lungs, the air passage (wind pipe) divides into smaller tubes, called bronchi which in turn form bronchioles.
    The bronchioles later terminates in balloon-like structures, called alveoli.
    The presence of alveoli in the lungs provides a very large area for the exchange of gases and this availability of large surface area maximises the exchange of gases. The alveoli have very thin walls and contain an extensive network of blood vessels to facilitate exchange of gases.
13. The small intestine is the site of the complete digestion of fats. The food coming from the stomach is acidic and has to be made alkaline for the pancreatic enzymes to act. It is made alkaline by bile juice secreted by the liver. The upper part of small intestine, also called duodenum, receives bile juice from the liver and the enzyme lipase from pancreatic juice. Bile salts break them down into smaller globules thereby increasing the efficiency of enzyme action and lipase for breaking down emulsified fats. The wall of the small intestine contain glands which secrete intestinal juice. The enzymes present in it finally convert the fats into fatty acids and glycerol. The latter are absorbed by villi and passed into their lacterals where fat is again formed.
14.



15. Resistance of wire $A(R_1) = \frac{\rho l}{A} = \frac{\rho l}{\pi r^2}$

Resistance of wire $B(R_2) = \frac{\rho l'}{A'} = \frac{\rho 2l}{\pi(2r^2)} = \frac{\rho 2l}{4\pi r^2}$

Total resistance in series R= $R_1 + R_2$

$$R = \frac{\rho l}{\pi r^2} + \frac{\rho 2l}{4\pi r^2}$$
$$R = \frac{\rho l}{\pi r^2}(1+\frac{1}{2}) = \frac{3\rho l}{2\pi r^2}$$

Ratio of the total resistance is series to the resistance of A

$$\frac{R}{R_1} = \frac{\rho l}{\pi r^2} / \frac{3\rho l}{2\pi r^2}$$
$$\Rightarrow \frac{R}{R_1} = \frac{\rho l}{\pi r^2} \times \frac{2\pi r^2}{3\rho l}$$
$$\frac{R}{R_1} = \frac{2}{3}$$

16. (a) An iron particle fell into Aslam's eye while using the grinder on iron railing.
(b) The doctor used an electromagnet to remove the tiny iron particle. Electromagnet is a powerful magnet and the iron particle in the eye is strongly attracted by the electromagnet, sticks to the electromagnet and gets removed.
(c) Mohan showed the values of (i) Ability to handle a serious situation with calmness and (ii) Desire to help others (by rushing Aslam to an eye hospital).

17. Difference between Nuclear fission and Nuclear fusion:

Nuclear Fission	**Nuclear Fusion**
(i) Heavy nucleus splits to form lighter	(i) Lighter nuclei fuse together to form

nuclei. (ii) Products are radioactive. (iii) Energy released to nearly 200 MeV. (iv) Energy per nucleon is less.	heavy nucleus. (ii) Products are non-radioactive. (iii) Energy released to nearly 21.6 MeV. (iv) Energy per nucleon is more.

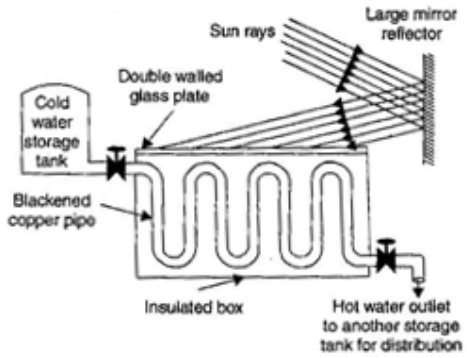
Example:

Fission: $^{235}_{92}\text{U} + {}^{1}_{0}n \longrightarrow {}^{139}_{56}\text{Ba} + {}^{94}_{36}\text{Kr} + 3{}^{1}_{0}n$ + Energy

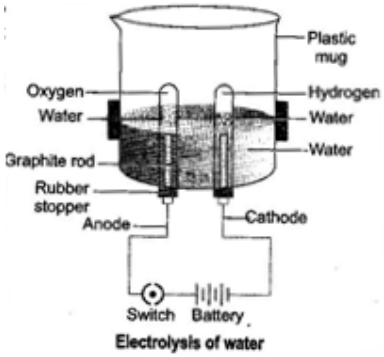
Fusion: ${}^{2}_{1}\text{H} + {}^{2}_{1}\text{H} \longrightarrow {}^{4}_{2}\text{He}$ + Energy

Fusion is not used to meet day-to-day energy requirements because it is not controlled so far, and it can be self sustained only at 10^8 K temperature.

18. **Solar water heater**: It is a device in which water is heated by using solar energy.
Principle: Solar water heater works on the heat absorbing property of balck surfaces and greenhouse effect.
It consists of an insulated box B which is painted black from inside and in which copper tube is fitted in the form of a coil. These copper tubes are painted black from outside so that they may absorb hot rays of the sun more efficiently. The box is covered with glass lid so as to prevent heat loss by convection and radiation. The two ends of the copper tube of solar water heater are joined to the water storage tank.



19. Activity
(i) Take a plastic vessel. Drill two holes at its bottom and set rubber stoppers in these holes.
(ii) Insert carbon electrodes in these rubber stoppers and connect these electrodes to a 6 volt battery and a switch.



Electrolysis of water

(iii) Fill the vessel with water such that the electrodes are immersed. Add a few drops of dilute sulphuric acid to the water in the vessel.

(iv) Take two graduated test tubes filled with water and invert them over the two carbon electrodes.

(v) Switch on the current.

(vi) After sometime you will observe the formation of bubbles at both the electrodes. These bubbles displace water in the graduated tubes.

(vii) Once the test tubes are filled with the respective gases, remove them carefully.

(viii) Test these gases one by one by bringing a burning splinter of wood close to the mouth of the test tubes.

(ix) When the glowing splinter of wood is brought close to the mouth of one test tube, it relights and when it is brought close to the mouth of other test tube, the gas burns with a pop. Oxygen is the only common gas that relights the splinter and hydrogen gas buns with a pop.

Or

(a) (i) Blue; white

(ii) The liquid droplets are actually the water droplets. The source of water droplets is the water of crystallization of hydrated copper sulphate crystals $(CuSO_4.5H_2O)$.

(b) When metal 'X' is dipped in aqueous solution of aluminiumsulphate no reaction is observed, it means it is less reactive than aluminium. But when it is dipped in ferrous sulphate solution, the solution turns form pale green to colourless, so 'X' is more reactive than iron and thus displaces it from its solution.

Therefore, 'X' must be Zinc. It reacts with ferrous sulphate to form colourless zinc sulphate solution by displacing iron.

$$Zn(s) + FeSO_4(aq) \longrightarrow ZnSO_4(aq) + Fe(s)$$

20. (i) Alloy is homogeneous mixture of two or more metals. One of them can be a non-metal also. Amalgam is an alloy of any metal with mercury.

Solder is an alloy used for welding electric wire together. It contains lead (Pb) and tin (Sn)

(ii) (a) Brass contains copper and zinc.

(b) Stainless steel containing iron, carbon along with chromium and nickel.

(iii) Bronze is an alloy of copper and tin.

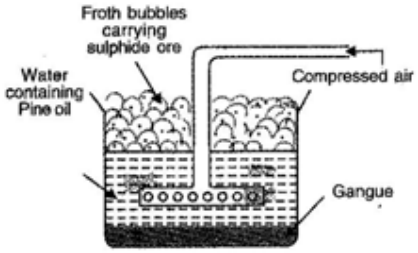
Brass does not get rusted easily whereas copper does. Stainless steel does not get rusted whereas iron does. Bronze is harder than copper and tin

Or

(i) **Hydraulic washing**: It is used for enrichment of oxides ore in which density of impurities is less than that of ore.

In this process, the crushed and finally powdered ore is washed with a steam of water. The lighter impurities are washed away, leaving behind the heavier ore particles.

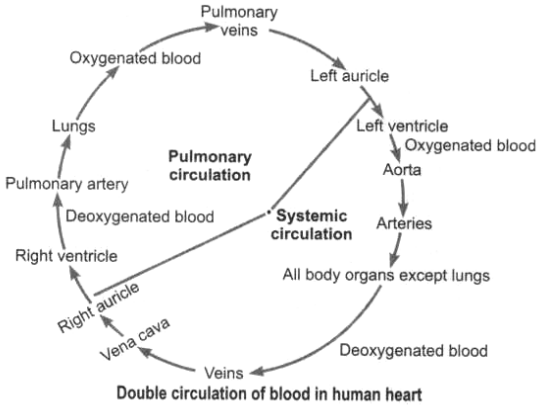
(ii) **Froth floatation process**: It is used to separate gangue from the sulphide ores especially of copper. In this process, the finally powdered ore is mixed with water in a large tank to form a slurry. Then some pine oil is added to it. The sulphide ores are preferentially wetted by the pine oil whereas the gangue particles are wetted by water. When air is blown through the mixture, the lighter oil froth carrying the metal sulphides rises to the top of the tank and floats as scum. It is then skimmed off and dried. The gangue particles being heavier, sink to the bottom of the tank.



Froth floatation process

(iii) Amalgam are alloys of mercury with other metals, e.g., Sodium amalgam, Zinc amalgam.

21. The blood passes through the heart twice through separate pathways for completing one cycle. This type of circulation is called double circulation.
The double circulation of blood includes:
(i)Systemic circulation
(ii)Pulmonary circulation
(i) Systemic circulation: It supplies oxygenated blood from left auricle to left ventricle, which is pumped to aorta to distribute blood to various body parts. The deoxygenated blood is collected from the various body organs by the veins to pour into vena cava and finally into the right atrium (auricle). Right atrium transfers this blood into the right ventricle.
(ii) Pulmonary circulation: The deoxygenated blood is pushed by the right ventricle into the lungs for oxygenation through pulmonary artery. The oxygenated blood is brought back to left atrium of the human heart through pulmonary vein. From left atrium, the oxygenated blood is pushed into the left ventricle. The left ventricle pumps oxygenated blood into aorta for systemic circulation.
These two types of circulation taken together is called **double circulation.**



Double circulation of blood in human heart

Or

(i) The pulmonary artery brings deoxygenated blood to the human heart.
(ii) The right auricle of human heart receives deoxygenated blood.
(iii) (a) Right auricle pours deoxygenated blood into right ventricle.
(b) From right ventricle deoxygenated blood flows to the lungs through pulmonary artery for oxygenation.

22. (a) The work done by a source of electricity to maintain current in a circuit is known as electrical energy. Its S.I. unit is joule.
(b) (i) Electricity consumed by refrigerator in one day = power × time
= 400W ×10h
= 4000Wh
= 4kwh
(ii) Electricity consumed by 2 electric fans in 1 day = power ×Time
= 2× 80W× 12h
= 1920Wh = 1.92kwh
(iii) Electricity consumed by 6 electric tubes in 1 day = 6×18W× 6h
= 648 wh
= 0.648 kwh
Total energy consumed in one day
= 4+1.92+0.648
= 6.548kwh
Total energy consumed in one month
= 6.568×30
= 197.04 kwh
Cost of 1 unit (kwh) = Rs 3.00
Cost of 197.04 kwh = 197.04×3
Electricity bill = Rs 591.12

Or

(i) Pure tungsten has a high resistivity and a high melting point (nearly 3000° C). When an electric current is passed through the filament, the electric energy is converted to heat and light energy due to the heating of the filament to a very high temperature. Due to the high melting point of tungsten, the filament does not melt.

(ii) The resistivity of an alloy is generally higher than that of its constituent metals. Alloys do not oxidize (burn) readily at higher temperatures. Therefore conductors of electric heating devices such as toasters and electric irons are made of an alloy rather than pure metal.

(iii) The series arrangement is not used for domestic circuit because:

(a) If connected in series total resistance will increase. Therefore current flowing through the circuit will be low.

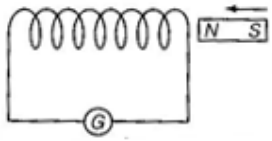
(b) If one appliance is switched off or gets damaged than all other appliances will also stop working because their electricity supply will be cut-off.

(iv) The resistance of a wire is inversely proportional to its cross-sectional area. Thus, a thick wire has less resistance and a thin wire has more resistance.

(v) Copper and aluminium wires are usually employed for electric energy transmission because copper and aluminium have very low resistivities.

23. The production of electric current due to relative motion between a conductor and a magnetic field is called **electromagnetic induction**. Electric current produced due to this phenomenon is called **induced current**. This was discovered by Michael Faraday and Joseph Henry.

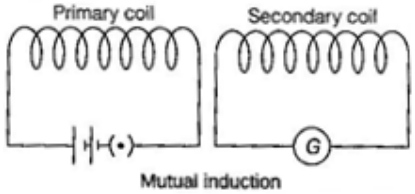
The direction of induced current can be reversed by reversing the direction of magnetic field. If the coil as well as the magnet are stationary, no current is induced in the coil.



There are two ways to producing induced current in the coil:

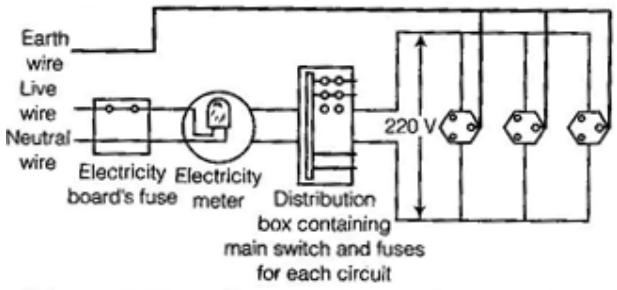
Self Induction: When the current flowing through a coil changes, then the current is induced in the coil itself. This phenomenon is called Self induction.

Mutual Induction: Another way to induce current in a coil is by the process of mutual induction. A current carrying coil called primary coil is placed close to a secondary coil as shown in figure.



When the current in primary coil is switched on, it takes a little time to rise from zero to a maximum value. This causes a momentary change in the magnetic field around this coil and hence induces a momentary current in the secondary coil. The same happens in reverse direction when the current in primary coil is switched off.

Or



Schematic diagram of one of the common domestic circuits

To avoid risk of electric shock, the metal body of appliances is earthed. Earthing means to connect the metal case of the appliance to earth (i.e. zero potential) by mean of a metal wire called earth wire (in green insulation cover).

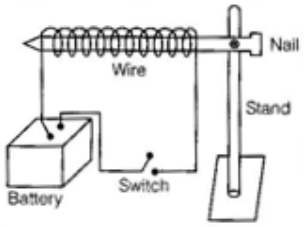
One end of the metal wire is buried in the earth. The appliances is connected to the earth by using he top pin of a 3-pin plug which connects to earth. Earthing saves us from electrical shocks.

24. An electromagnet works on the principle of magnetic effect of current.

Aim: To construct an electromagnet.

Material required: Iron nail, copper wire, sand paper, cell, iron filings

Procedure:



(i) Take an iron nail and clean it with cloth.

(ii) Take insulated copper wire of length 1 m and shave off both its end with the help of sand paper.

(iii) Wind the wire nearly on the iron nail to form a cylindrical coil.

(iv) Connect the free ends of the wire to the terminals of a cell.

(v) Bring iron filings near the nail and observe what happen.

Iron filings get attracted to the iron nail because iron nail behaves like a magnet when current passes through it.

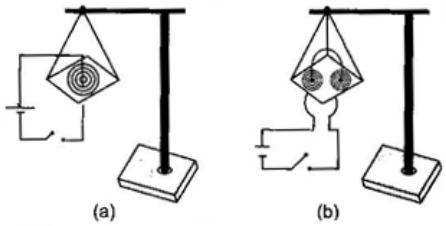
Uses: Electromagnets are used in electric bell, cranes etc.

Or

Aim: To draw magnetic lines of force around a current carrying (a) straight conductor, (b) circular loop

Material required: A cell, switch, connecting wires, an insulated copper wire, iron filings, card board.

Procedure:



(i) Hang the cardboard horizontally on a stand.
(ii) Pass the copper wire through the centre of the cardboard.
(iii) Connect cell, switch and copper wire in series through the connecting wires.
(iv) Switch the circuit on sprinkle iron filings gently on the card board and tap it.
(v) The iron filings will arrange themselves in the form of connecting rings around the wire.
(vi) Now bend the wire into a loop and pass it through the cardboard as shown. Repeat step (iv) again.
(vii) Observe the pattern of field lines.

The magnetic field around a current carrying conductor appears in the form of concentric circles.

The magnetic field in the centre of a current carrying circular loop appears as straight lines.

Section B

25. The colour of litmus paper will be changed into blue because limewater is a base which turns red litmus blue. The chemical formula of limewater is $Ca(OH)_2$.
26. (a) Only A and B portions remained colourless and the rest of the leaf turned blue-black.
    (b) Portion of leaf covered with opaque paper does not get sunlight.
27. The respectively parts are s milliammeter, a resistor and a voltmeter because Ammeter (X) in series and voltmeter (Z) in parallel to the resistor (Y).

28. (c)
29. (b)
30. (a)
31. (a)
32. (a)
33. (d)
34. (c)
35. (c)
36. (b)