CHAPTER 3 – FIBRE TO FABRIC

ACTIVITY- 3.1 : To know about the hairs of some animals. (Page No. 22-24)

Question 1- Name any two natural fibres obtained from plants.

Answer- Cotton and jute.

Question 2- Name any two natural fibres obtained from animals.

Answer- Wool and silk.

Question 3- Name any three animals which provide us wool.

Answer- Sheep, goat, camel and yak.

Question 4- Why do some animals have a thick coat of hairs?

Answer- Hairs trap a lot of air. Air is a poor conductor of heat, so it does not allow the body heat to escape and keep the body warm.

ACTIVITY- 3.4 : Burn test for Natural and Synthetic fibres. (Page No.- 29)

Question 1- What difference in smell you notice on burning silk thread, artificial silk thread and wool?

Answer- Smell of burning thread of artificial thread is like burning of paper. But smell of burning of thread of silk and wool is like burning of hairs.

Question 2- What type of ash is formed in the above activity?

Answer- Artificial silk is converted into soft black ash on burning, while silk and wool is converted into dark brittle and easily crushable bead.

Question 3- Does the smell of burning of silk thread is same as the smell of burning woolen thread?

Answer- Yes.

EXERCISE

Question 1- Fill In The Blanks.

(i). Wool is obtained from the fleece (hair) of sheep, goat and yak

(ii). Long hair on the body protect animals from winter.

(ii). Removal of fleece from the skin of animal is called Shearing.

(iv). Rearing of silkworm is called Sericulture.

(v). The process of unwinding the filaments from the boiled cocoons, is called Reeling.

Question 2- Match The Following :

Column 'A'	Column 'B'
(i) Scouring	(a) Food of silkworm
(ii) Sericulture	(b) Sheep found in Rajasthan
(iii) Protein	(c) Silk fibre made up of
(iv) Mulberry leaves	(d) Rearing of silkworms
(v) Lohi	(e) Cleaning sheared fleece

Question 3. Choose The Correct Answer.

(i). The fibre which is not produced by animals :

a) Angora Wool b) Wool c) Jute **(✓)** d) Silk

(ii). Wool is commonly obtained from :

a) Sheep b) Goat c) Yak d) All of the above **(✓)**

(iii). Washing of sheared hair is called :

a) Scouring **(✓)** b) Sorting c) Shearing d) Dyeing

(iv). Wool is chemically :

a) Fat b) Protein **(✓)** c) Carbohydrate d) None of these

(v). The animal that does not yield wool is :

a) Alpaca b) Woolly dog **(✓)** c) Camel d) Goat

Question 4- Write True Or False.

(i) Air is bad conductor of heat. **(True)**

(ii) Air trapped in long hair does not allow body heat to escape from body. **(True)**

(iii) In Tibet and Ladakh, wool is obtained from yak. **(True)**

(iv) Rearing of silk moths is called apiculture. **(False)**

(v) The cover around the body of caterpillar is called cocoon. **(True)**

(vi) Tassar silk and moonga silk are produced by silk moth who have been feeding on non-mulberry trees. **(True)**

Question 5- Very Short Answer Type Questions.

(i) Name any two plant fibres and animal fibres.

Answer- **Plant fibres**- Cotton, jute.

Animal fibres- Wool and silk.

(ii) What is sericulture?

Answer- Rearing of silkworms for production of silk is known as sericulture.

(iii) Name the common animals who yield fleece.

Answer- Sheep, goat, yak and camel.

Question 6- Short Answer Type Questions.

(i) What you understand by Angora and Kashmere wool?

Answer- Angora wool is obtained from Angora goats found in hilly regions such as Jammu and Kashmir, while Kashmiri wool is obtained from Kashmiri goat.

(ii) Write the states where the following breeds of sheep are found:-

Lohi, Bakharwal, Nali and Marwari.

Answer- **Lohi**- Rajasthan, Punjab.

Bakharwal- Jammu and Kashmir.

Nali- Rajasthan, Hariana, Punjab.

Marwari- Gujarat.

(iii) Write all the steps involved in processing of fibres into wool.

Answer- (1) Shearing, (2) Scouring, (3) Sorting, (4) Combing, (5) Dyeing, (6) Spinning.

(iv) Why do some animals have a thick coat of hair.

Answer- Hairs trap a lot of air. Air is a poor conductor of heat, so it does not allow the body heat to escape and keep the body warm.

(v) How is silk moth reared?

Answer- Eggs of silk moth are stored carefully on strips of cloth or paper and sold to silkworm farmers. The farmers keep eggs under hygienic conditions, under suitable temperature and humidity. The eggs are warmed to a suitable temperature for the larvae to hatch from eggs when mulberry trees bear a fresh crop. The worms are kept in bamboo trays along with mulberry leaves. By eating leaves larvae change into caterpillar, then caterpillar into cocoons. The farmers get silk fibres from cocoon.

Question 7- Long Answer Type Questions.

(i) Write all the steps in processing silk from cocoons.

Answer- **(1) Boiling**- The cocoons are boiled in hot water to kill larvae and to soften the silk gum.

(2) Reeling- The process of taking out threads from the cocoon for use as silk is called reeling the silk. This is done with special machines.

(3) Throwing- In this process the raw silk is twisted to produce thrown silk.

(4) Dyeing- In the end silk is dyed for making colorful fabrics.

(ii) Draw a well labeled diagram and explain the life cycle of silk moth.

Answer- (1) The female silk moth lay eggs on the leaves of mulberry trees.

(2) The eggs hatch larvae in two weeks to form worm like structures which are called caterpillars or silkworms. They eat leaves and grows to become pupa.

(3) To protect itself pupa secretes fibre made of protein and rotates its mouth in the shape of 8. Hence a cocoon made of silk fibre is constructed around the moth.

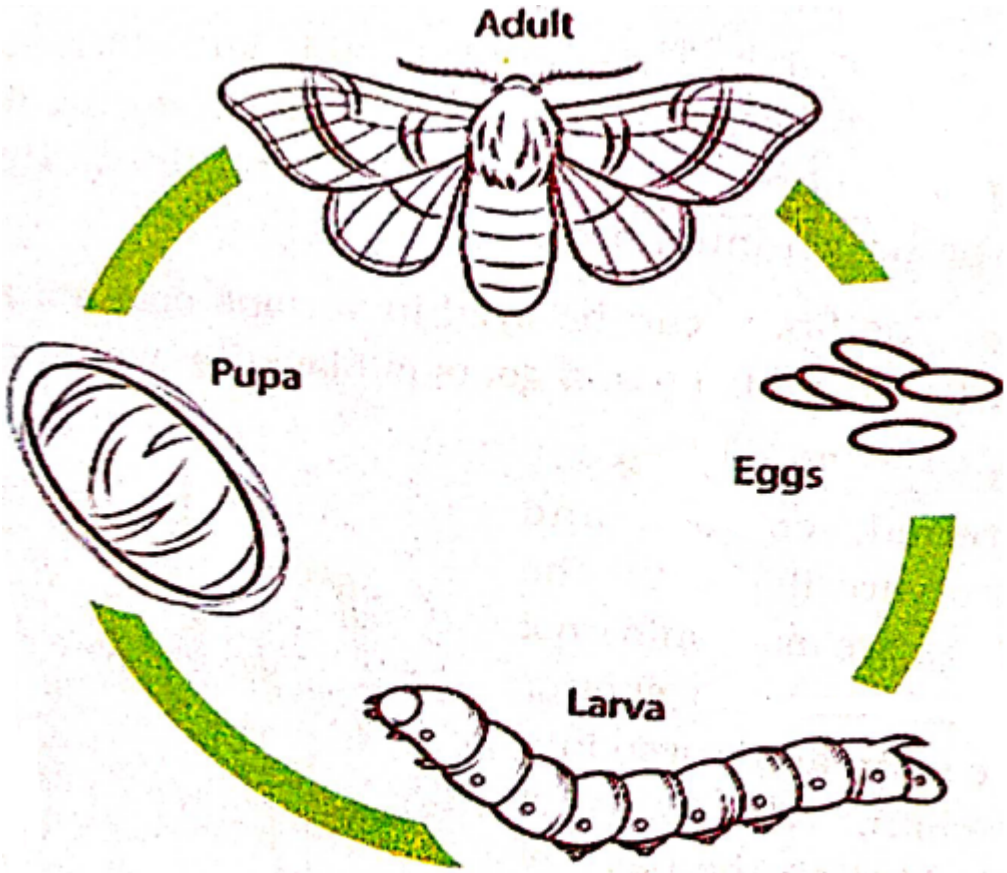


Fig 3.11: Life Cycle in Silk Moth

CHAPTER 5 – ACIDS, BASES AND SALTS

ACTIVITY- 5.2 : To understand the process of neutralization. (Page No.- 53, 54)

Question 1- What will be the color of basic solution after the addition of phenolphthalein?

Answer- Pink.

Question 2- Name the products of neutralization.

Answer- Salt and water.

EXERCISE

Question 1- Fill In The Blanks.

(i) Acids are **sour** in taste.

(ii) Litmus and turmeric extract are **natural** indicators.

(iii) Phenolphthalein is **colorless** in acidic solution.

(iv) Reaction between an acid and a **base** is called neutralization reaction.

(v) Ant's sting has **formic** acid.

(vi) Excess secretion of hydrochloric acid in stomach, is called **acidity**.

(vii) Milk of magnesia is used in case of **acidity**.

Question 2- Match The Column 'A' With Column 'B'.

Column A	Column B
(i) Red litmus changes to blue in	(a). Neutralization
(ii) Blue litmus changes to red in	(b). Zinc carbonate
(iii) Reaction between an acid and a base	(c). Basic solution
(iv) Formic acid	(d). Ant bite
(v) Calamine	(e). Acidic solution

Question 3. Choose The Correct Answer.

(i). Vinegar contains :

a) Acetic acid **(✓)** b) Lactic acid c) Citric acid d) Tartaric acid

(ii). Tamarind contains :

a) Acetic acid b) Lactic acid c) Citric acid d) Tartaric acid **(✓)**

(iii). The example of natural indicator is :

a) Litmus b) Turmeric extract c) China rose petals d) All the above **(✓)**

(iv). The color of blue litmus in acidic solution is :

a) Purple b) Blue c) Red **(✓)** d) Pink

(v). Amla contains :

a) Ascorbic Acid **(✓)** b) Quick lime c) Calamine d) All the above

Question 4- Write True Or False.

(i) Citric acid is found in tamarind. **(False)**

(ii) Ant's sting has oxalic acid. **(False)**

(iii) Turmeric extract gives reddish brown color in basic solution. **(True)**

(iv) Sodium hydroxide turns blue litmus red. **(False)**

(v) Organic matter is used to treat acidic soil. **(True)**

Question 5- Very Short Answer Type Questions.

(i) Which acid is secreted in our stomach?

Answer- Hydrochloric acid.

(ii) Name any two ant acids.

Answer- Baking soda and milk of magnesia.

(iii) What type of substances are used as ant bites?

Answer- Formic acid.

(iv) Name any two citrus fruits.

Answer- Orange and lemon.

(v) Why is it essential to treat acidic products?

Answer- Because acidic products pollute soil and water.

Question 6- Short Answer Type Questions.

(i) Name the source from which litmus solution is obtained. What is the use of this solution?

Answer- Litmus solution is obtained from Lichens. Litmus solution is used to test whether a substance is acidic or basic in nature.

(ii) Is the distilled water acidic/basic/neutral? How would you verify it?

Answer- Distilled water is neutral and one can easily test it with the help of litmus paper. When we dip blue or red litmus paper in distilled water, there will not be any change in the color.

(iii) Describe the process of neutralization with the help of an example.

Answer- When an acid is mixed with a base, and then they react with each other to form the salt and water with the release of energy and cancel each other's effect. This process is neutralization process.

Acid + Base → Salt + Water + Heat

Example:

$$NaOH + HCl \rightarrow NaCl + H_2O + Heat$$

(iv) Name any two common acids and two common bases.

Answer- Acids- Citric acid, hydrochloric acid, sulphuric acid.

Bases- Sodium hydroxide, Magnesium hydroxide, Calcium hydroxide.

(v) What are indicators? Write their types and two examples of each.

Answer- Indicators- These are special type of substances used to test whether a substance is acidic or basic. Indicators give different color in acid and base.

Types- (1) Natural Indicators- Litmus, turmeric, china rose petals etc.

(2) Synthetic Indicators- Phenolphthalein, methyl orange etc.

Question 7- Long Answer Type Questions.

(i) State differences between acids and bases.

Answer-

Acids	Bases
1. They are sour in taste.	1. They are bitter in taste.
2. They change blue litmus into red.	2. They change red litmus into blue.
3. They turn china rose extract dark pink.	3. They turn china rose extract dark green.
4. They give no color change with phenolphthalein.	4. They give pink color with phenolphthalein.
5. For example lemon and orange have acid.	5. For example soap and baking soda are bases.

(ii) Name the acid present in (i) Vinegar, (ii) tamarind, (iii) citrus fruits and (iv) curd.

Answer- (i) Vinegar- Acetic acid.

(ii) Tamarind- Tartaric acid.

(iii) Citrus fruits- Citric acid.

(iv) Curd- Lactic acid.

(iii) You are given hydrochloric acid solution, sodium hydroxide solution and water in three different bottles. How would you check which bottle has which compound?

Answer- We will take three turmeric indicator paper strips. Then we will put some drops from all the three solutions on different strips. The solution which turn the turmeric indicator red, is basic i.e. sodium hydroxide. Now put some drops from other two bottles on this red paper. The solution which turns this red turmeric paper to yellow is acidic i.e. hydrochloric acid. Remaining solution is water which does not change the color of turmeric indicator in both conditions.

CHAPTER 13

MOTION AND MEASUREMENT OF DISTANCES

ACTIVITY- 13 .1: Measuring the time period of a simple pendulum.

(Page No.- 161, 162)

Question 1- What is simple pendulum?

Answer- Heavy mass suspended by a thread from a rigid support is called simple pendulum.

Question 2- What is the to and from motion of a simple pendulum called?

Answer- Oscillation.

Question 3- The taken for one oscillation of the pendulum is called its _____.

Answer- Time period.

Question 4- _____ is the number of oscillations per unit time.

Answer- Frequency.

ACTIVITY- 13 .2: Measuring the speed of a ball.

(Page No.- 162, 163)

Question 1- What do you measure by using a stop clock?

Answer- Time

Question 2- What is the unit of measuring distance? OR Name the S.I. unit of distance.

Answer- metre (m).

EXERCISE

Question 1- Fill In The Blanks.

(i). The motion of an object in a straight line is called **linear motion**.

(ii). A clock is used to measure **time**.

(iii).The Distance-Time graph for uniform speed is a **straight line.**

(iv).The motion of a simple pendulum is called **oscillatory motion**.

Question 2- Write True Or False.

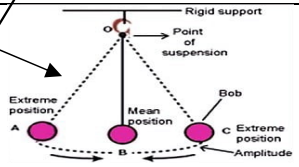
(i). Speed is the distance travelled by an object per unit time. **(False)**

(ii). The S.I. unit of speed is km/s. **(True)**

(iii).The time taken to complete one oscillation of a pendulum is its time period. **(True)**

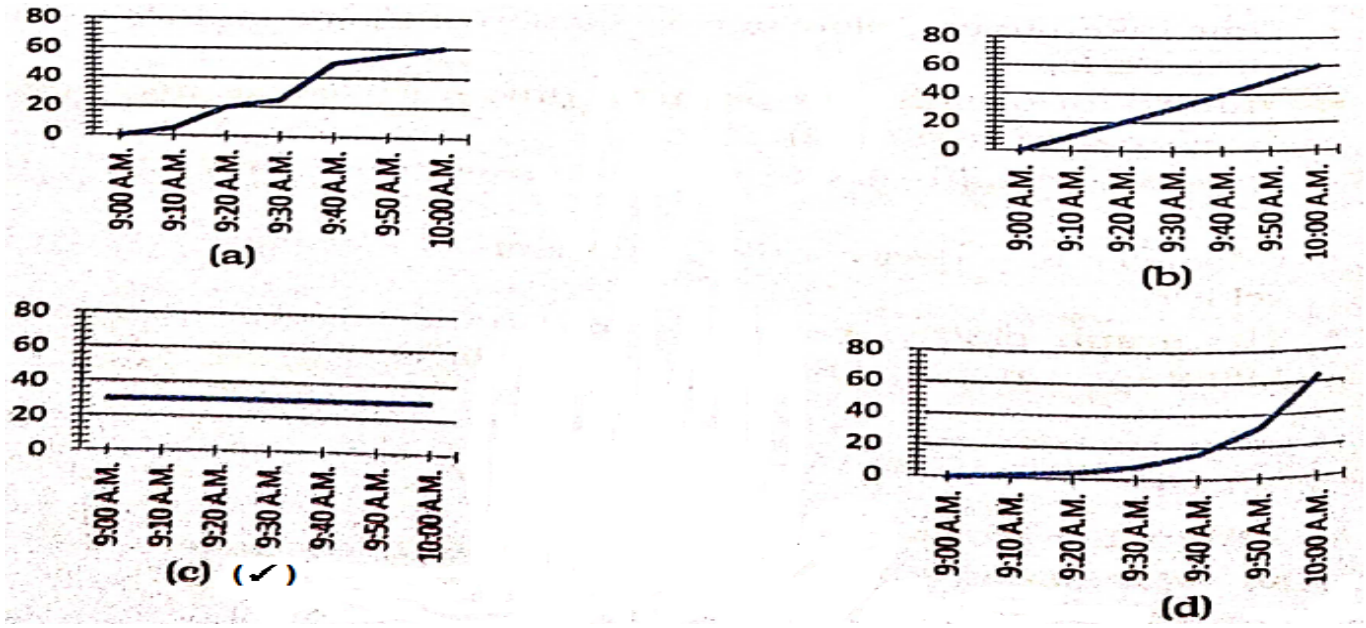
(iv). The instrument used to measure the speed of a vehicle is odometer. **(False)**

Question 3- Match The Column 'A' With Column 'B'.

A	B
(i) Periodic Motion	(a) 
(ii) Measure Time	(b) 
(iii) Measure Speed	(c) 
(iv) Slow motion	(d) 

Question 4. Multiple Choice Questions :

(i). Which of the following is a Distance-Time graph for an object at rest?



(ii). Which of the following relation is correct for finding speed of an object?

a) Speed = Distance x Time
b) Speed = Distance / Time (✓)
c) Speed = Time / Distance
d) Speed = 1 / Distance x Time

(iii). Simple pendulum is an example of ……. Motion.

a) Rectilinear motion
b) Oscillatory motion (✓)
c) Periodic motion
d) Rotational motion.

(iv). A car moves with a speed of 40 km/h for 15 minutes and then with speed of 60 km/h for the next 15 minutes. The total distance covered by the car is :

a) 100 km
b) 25 km (✓)
c) 15 km
d) 10 km

Question 5- Very Short Answer Type Questions.

(i) Define speed. Give its S.I. unit?

Answer- Speed is the distance covered by an object in unit time. S.I. unit of speed is metre (m).

(ii) Which instruments were used for measuring time by the ancient people?

Answer- Sundial, sand watch and water watch etc.

(iii) Name the instruments used for measuring (a) the speed of a moving vehicle, (b) the distance moved by a vehicle.

Answer- (a) The speed of a moving vehicle- Speedometer.

(b) The distance moved by a vehicle- odometer.

(iv) What is Graph? Give its types.

Answer- Graph- A Graph is a pictorial representation of variation of one quantity with respect to the other quantity.

Types- Line Graph, Bar Graph and Pie chart etc.

Question 6- Short Answer Type Questions.

(i) Differentiate between slow and fast motion. Give examples

Answer- Slow motion- An object is said to be in slow motion, if it takes more time to cover a certain distance. Examples- Motion of a snail and tortoise.

Fast motion- An object is said to be in fast motion, if it takes shorter time to cover a certain distance. Examples- Motion of a racing car and tiger.

(ii) Differentiate between uniform and non-uniform motion. Give examples.

Answer- Uniform motion- Object moving in a straight line at a constant speed are said to be in uniform motion. For example a train moving with constant speed on a straight track.

Non-uniform motion- Object moving in a straight line with a varying speed are said to be in non-uniform motion. For example motion of our bicycle while coming from home to school.

(iii) Ajay goes to his school 600 meters away from his house. Find the speed in ms^{-1} , with which he must walk to reach his school in 5 minutes.

Answer- Distance = 600 m

Time = 5 minutes = 5 X 60 seconds = 300 seconds

Speed = Distance / time = $\frac{600}{300}$ = **2 ms^{-1}.**

(iv) The distance between two stations is 216 km. In how many hours will a train reach the destination which is moving at a speed of 20 m/s.

Answer- Distance = 216 km = 216 X 1000 m = 216000 m

Speed = 20 m/s

Time = ?

We know that, Speed = Distance / Time

So, Time = Distance / Speed

Time = $\frac{216000}{20}$ = 10800 sec = $\frac{10800}{3600}$ hours = **3 hours.**

(v) Find the time period of a simple pendulum, which takes 20 s to complete 50 oscillations.

Answer- Time taken to complete 50 oscillations = 20 sec

Time taken to complete 1 oscillation = $\frac{20}{50}$ = **0.4 sec.**

Question 7- Long Answer Type Questions.

(i) Describe the method to find the time period of a simple pendulum.

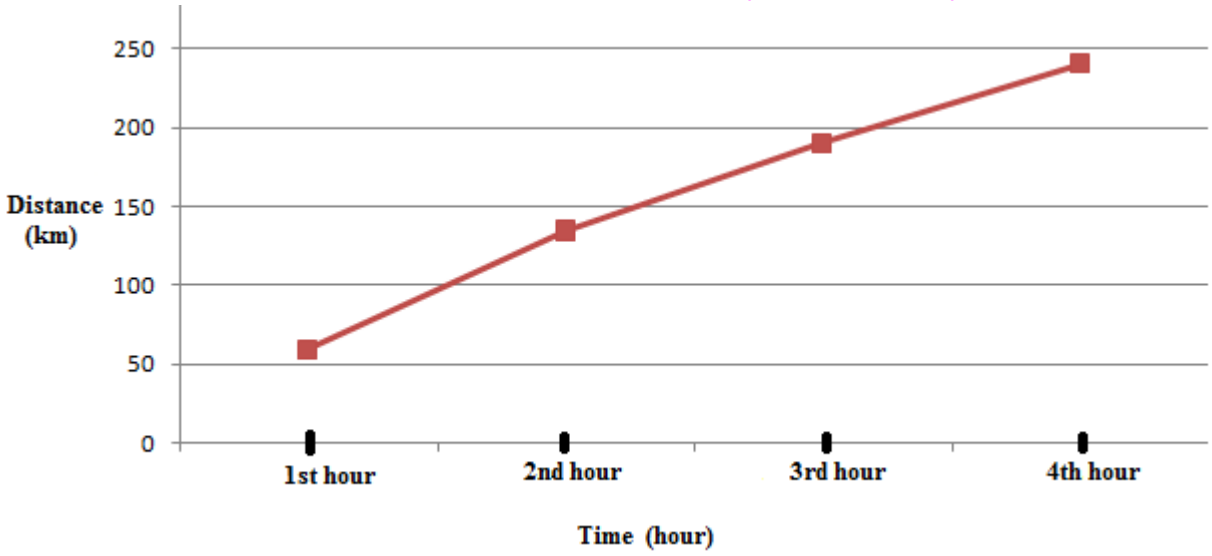
Answer- Suspend the bob of simple pendulum with 1 metre long thread from a rigid support. Mark the mean position of pendulum on the floor with chalk. Take the bob to one side while keeping the thread stretched and start stop watch. Measure the time taken by pendulum to complete 20 oscillations. Divide this time with 20, you will get time period for 1 oscillation i.e. time period.

(ii) A car moves a distance of 60 km in 1st hour, 75 km in 2nd hour, 55 km in 3rd hour and 50 km in 4th hour. Plot a distance-time graph for the motion of the car.

(i) Find the speed of the car for the whole journey,

(ii) Find the speed of the car between 1st and 3rd hour.

Answer-



(i) For whole journey, Distance= 240 km

Time = 4 hours

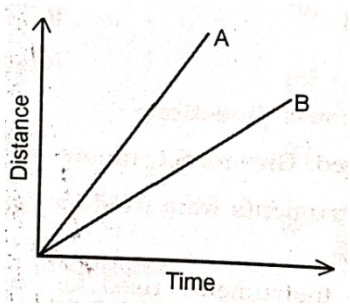
Speed = Distance / time = $\frac{240}{4}$ = **60 km/h**

(ii) Between 1st and 3rd hour, Distance = 190 km

Time = 3 hours

Speed = Distance / Time = $\frac{190}{3}$ = **63.33 km/h.**

(iii) Figure shown below represents the distance-time graph for the motion of two vehicles A and B. Which one of them is moving faster?



Answer- Vehicle A is moving faster, because in graph A has more slope than vehicle B. In distance-time graph slope gives the speed.

CHAPTER 14 – ELECTRC CURRENT AND ITS EFFECTS

ACTIVITY- 1 : To make an electrc circuit. (Page No.- 174, 175)

Question 1- How many terminals are there in an electric cell? Name them.

Answer- Two i.e. positive and negative terminals.

Question 2- What is the role of switch in the electric circuit?

Answer- Switch closes (ON) and open (OFF) the electric circuit.

ACTIVITY- 2 : Heating effects of electric current. (Page No.- 175, 176)

Question 1- When switch is in 'ON' position then bulb …… and feels ……

Answer- Glows, hot.

ACTIVITY- 3 : Heating effects of current in a wire. (Page No.- 176)

Question 1- When switch is 'OFF' the wire feels hot. (True/False)

Answer- False.

Question 2- When swtch is 'ON' the wire feels cold. (True/False)

Answer- False.

Question 3- If you take any other wire, will you feel the same effect?

Answer- Due to high resistivity of nichrome, it shows large heating effect. Any other wire will produce low heat or it may melt.

ACTIVITY- 4 : Magnetic effects of electric current. (Page No.- 177, 178)

Question 1- Why a magnetic needle points in NS direction when there is no magnetic substance near it?

Answer- Because earth behaves like a magnet.

Question 2- Why magnetic needle gets deflected when a bar magnet is brought near it?

Answer- Because magnetic field of bar magnet, exert force on magnetic needle.

Question 3- Why a magnetic needle gets deflected when current is switched ON?

Answer- When current is switched ON, a magnetic field is produced around the wire.

ACTIVITY- 5 : To make an electromagnet. (Page No.- 179)

Question 1- Why do the pins get stick to the iron nail when current is passed through it?

Answer- Because on passing electric current, the coil along with iron nail becomes magnet.

Question 2- Why the pins fall back after sometime when current is switched off?

Answer- Because coil along with iron nail gets demagnetized when current is switched off.

EXERCISE

Question 1- Fill In The Blanks :

(i). Shorter line in the symbol for cell represents **negative terminal**.

(ii). Combination of two or more cells is called **battery**.

(iii). When key is in **ON** position current flows through the circuit.

(iv). In a battery positve terminal of one cell is connected to **negative** terminal of next cell.

(v). Electric heater works on the **heating** effect of current.

Question 2- Write True Or False.

(i). To make a battery of two cells, positive terminal of one cell is connected to negative terminal of another. **(True)**

(ii). Electric iron works on the basis of heating effect of current. **(True)**

(iii). Magnetic crane is based on magnetic effect of current. **(True)**

(iv). When current flows in the circuit then circuit is called open circuit. **(False)**

(v). An electric bell works on the principle of electromagnet. **(True)**

Question 3- Match The Column:-

Column I	Column II
(i) Electric cell	(a). Electric component
(ii) Electric heater	(b). Heating effect of current
(iii) Electric fuse	(c). Electromagnet
(iv) Magnetic crane	(d). Safety device

Question 4. Choose One Option For The Follwing.

(i). Which electric appliance is not based on heating effect of current :

a) Electric toaster b) Loudspeaker **(✓)** c) Heater d) Electric iron

(ii). Which of these devices are not based on magnetic effect of current :

a) Room heater **(✓)** b) Magnetic crane c) Electric bell d) Loudspeaker

(iii). The amount of heat produced in wire depends on :

a) Nature of material b) Length c) Thickness d) All of these **(✓)**

(iv). The wire used in the bulb is called :

a) Element b) Spring c) Filament **(✓)** d) Component

(v). An electric bell consists of :

a) Gong b) Hammer c) Electromagnet d) All of these **(✓)**

Question 5- Very Short Answer Type Questions.

(i) What is an electromagnet? How does it work?

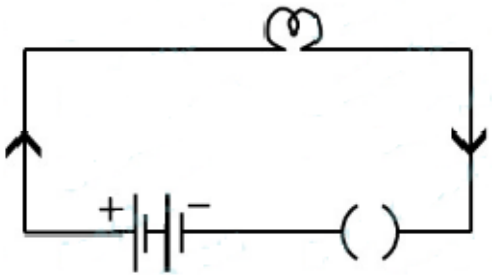
Answer- The substances which become magnet when current passes through them and losses their magnetic effect when current is switched off, are called electromagnets. These are based on magnetic effect of electric current.

(ii) What is a magnetic crane? How does it work?

Answer- Magnetic crane is based on magnetic effect of electric current. It has an electromagnet with which we can pick big containers, separate magnetic materials from garbage.

(iii) Draw an electric circuit with one battery, one bulb and one switch in open position.

Answer-



Question 6- Short Answer Type Questions.

(a) Define the following terms :

(i) An electric cell, (ii) A battery, (iii) Electric circuit, (iv) Open circuit, (v) Closed circuit.

Answer- (i) <u>An electric cell</u>- It is a source of electric current.

(ii) <u>A battery</u>- It is the combination of two or more than two cells.

(iii) <u>Electric circuit</u>- It is a closed path consists of electric appliances through which electric current flows.

(iv) <u>Open circuit</u>- It is the circuit through which current is not flowing.

(v) <u>Closed circuit</u>- It is the circuit through which current is flowing.

Question 7- Long Answer Type Questions.

(i) Explain the principle, construction and working of an electric bell using suitable diagram.

Answer- <u>Principle</u>- Electric bell works on the principle of electromagnet.

<u>Construction</u>- It has main three parts – Electromagnet, gong and hammer.

<u>Working</u>- When we switch on the bell, current flows through the coil via contact screw and coil becomes electromagnet. It attracts the iron strips towards it and hammer strikes the gong to produce sound. In this process circuit break as hammer loss the contact with contact screw. So coil no longer remains electromagnet and do not attract hammer. This process continues again and again and the bell keeps ringing.

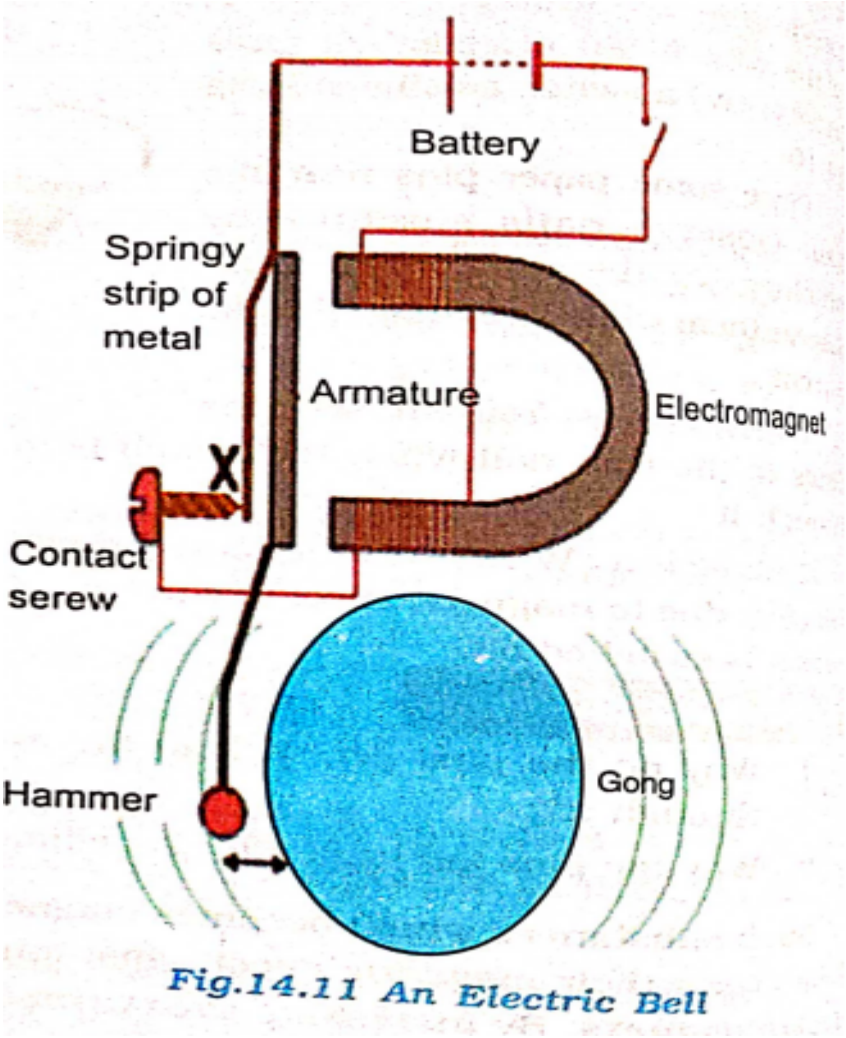


Fig.14.11 An Electric Bell

(ii) What is an electric fuse? How does it work? Why is it essential in an electric supply?

Answer- Electric fuse is a wire made of special materials which melt quickly and break when a large current is passed through it because of short circuit or overloading. Hence it breaks the electric circuit and prevent electric fires and accidents. It also prevents damage to electric appliances.