

CHAPTER 8 – BODY MOVEMENTS

ACTIVITY- 1, 2, 3:

(Page No.- 75,76,77)

Question 1- What are the small bones present in backbone called?

Answer- Vertebrae.

Question 2- Name the ridges like bones which we feel when we touch our chest region.

Answer- Ribs.

ACTIVITY- 5: To know about the points where bones meet.

(Page No.- 77, 78)

Question 1- When you tie a scale with your arm, are you able to bend your elbow?

Answer- No.

Question 2- Name the points where two parts of body are seen to be joined together.

Answer- Joints.

ACTIVITY- 6: To make a model of hinge joint.

(Page No.- 79, 80)

Question 1- Move your arm at shoulder. Are you able to move it various directions? If yes name the type of joint present there.

Answer- Yes, we can move our shoulder in various directions. Our shoulder has ball and socket joint.

Question 2- Move your arm at elbow. Are you able to move it in various directions? If yes name the type of joint present there.

Answer- No, we cannot move our arm at elbow in all directions, because it has hinge joint.

EXERCISE

Question 1- Fill In The Blanks.

- The points where bones meet are called joints.
- Human skeleton is made up of bones and cartilages.
- Skull protects brain of our body.
- Earthworm can extend or shorten its body by using its muscles.
- Knee joint is an example of hinge joint.

Question 2- Write True Or False.

- Rib cage is conical structure made up of 12 pairs of ribs. (False)
- Cartilages are harder than bones. (False)
- Bones do not need the help of muscles to move. (False)
- A streamlined body is one in which middle part of body is larger than head and tail part. (True)
- Snakes move very fast in a straight line. (False)

Question 3- Match The Column:-

Column A	Column B
1. Ball and Socket joint	a. Skull Bones
2. Immovable joint	b. Fingers
3. Hinge joint	c. Wrist bones
4. Pivot joint	d. Shoulder
5. Gliding joint	e. Movement of head

Question 4. Choose The Correct Answer.

(i). Which of the following organ is protected by rib cage:

- a) Heart (✓) b) Brain c) Eyes d) Ear

(ii). Snail moves with the help of:

- a) Shell b) Bones c) Muscular foot (✓) d) Cartilage

(iii). Fish maintains its balance water and change its directions with the help of:

- a) Head b) Gills c) Fins (✓) d) Body Scales

Question 5- Very Short Answer Type Questions.

(i) Name the longest bone in human body.

Answer- Femur.

(ii) Name the type of joint where arms join the shoulder.

Answer- Ball and Socket joint.

(iii) What is the difference between movement and locomotion?

Answer- Movement is change in position of one part of body whereas locomotion means moving the whole body from one place to another.

(iv) Give an example of an organism which can walk, climb and fly?

Answer- Cockroach.

Question 6- Short Answer Type Questions.

(i) Why we need a pair of muscles to move a bone?

Answer- Because to move a bone one muscle contracts and other one relax at the same time.

(ii) How does earthworm move?

Answer- Earthworm moves by regular contractions and expansions of body using muscles. Snail moves by muscular foot.

(iii) How does the body of a bird help it in flight?

Answer- Birds have streamlined body, hollow bones and forelimbs modified into wings which enable them to fly in air.

Question 7- Long Answer Type Questions.

(i) Explain different types of joints present in human body.

Answer- (1) **Fixed Joints**- Joints where no movement of bones is possible. For example joints in skull.

(2) **Movable Joints**- The joints where movement of bones is possible. It has four types-

(i) **Ball and Socket Joint**- In this joint a ball like end of one bone moves in socket like end of another bone. For example joint in shoulder.

(ii) **Pivot Joint**- In this joint a cylinder like end of one bone rotates in ring like end of another bone. For example joint in neck.

(iii) **Hinge Joint**- This joint is like hinge in door. It allows movement of bones only in one direction i.e. up and down or back and forth. For example joints in elbow and knee etc.

(iv) **Gliding Joint**- This joint allows bones to glide over each other. For example joint in wrist.

(ii) Explain the locomotion of fish.

Answer- The fish has streamlined body. Fish produces regular jerks by making curves and pushes the body forward. The body movements like change in directions while swimming and to maintain balance is helped by fins.

CHAPTER 11

LIGHT, SHADOWS AND REFLECTION

ACTIVITY- 1: To distinguish transparent, opaque and translucent objects.

(Page No.- 108, 109)

Question 1- Classify different objects depending on whether an object allows light to pass through it completely, partially or not at all.

Answer- Transparent, translucent and opaque objects.

Question 2- Classify the objects given in following table as transparent, opaque or translucent.

Object/ Material	Transparent/ Opaque/ Translucent
Water	Transparent
Tissue Paper	Translucent
Stone	Opaque
Air	Transparent
Book	Opaque
Mirror	Opaque
Thin Cloth	Translucent

ACTIVITY- 2: To show that light travels in a straight line.

(Page No.- 109)

Question 1- Light travels in _____ line path

Answer- Straight.

Question 2- Light cannot pass through _____ material.

Answer- Opaque.

ACTIVITY- 3 : To show that screen is compulsory for the formation of shadow.

(Page No.- 110, 111)

Question 1- For shadow formation, how many things are required?

Answer- Three i.e. a source of light, an opaque object and a screen.

Question 2- A shadow is observed, on a screen, when an _____ object comes in-between screen and a source of light.

Answer- Opaque.

ACTIVITY- 4: To study factors on which size and colour of shadow depends.

(Page No.- 111, 112)

Question 1- The size of shadow of a given opaque object depends on relative _____ of source of light and the opaque object.

Answer- Position.

Question 2- What may be the colour of opaque object, shadow will always be _____. (black/ white)

Answer- Black.

ACTIVITY- 5: To construct a pinhole camera.

(Page No.- 113-115)

Question 1- Pin hole camera is based on the fact that in ordinary conditions light travel in _____ path.

Answer- Straight line.

Question 2- The images formed by pin hole camera is _____ and _____.

Answer- Inverted and smaller in size.

ACTIVITY- 6 : To observe reflection of light.

(Page No.- 115, 116)

Question 1- A mirror does not change the direction of light that falls on it. (true/ false)

Answer- False.

Question 2- A polished or shining surface like plane mirror produces _____ reflection.

Answer- Regular.

EXERCISE

Question 1- Fill In The Blanks.

- An object that allow light to pass through them partially are known as **translucent** objects.
- Light source like the Sun that emit light of their own are called **luminous** objects.
- Never ever look directly at the Sun because it could be extremely **dangerous** for the eyes.
- The change in direction of propagation of light when light allowed to fall on polished surface is called **reflection** of light.
- Due to **reflection** phenomena rooms are lighted up in day time though no direct sunlight enters the room.

Question 2- Write True Or False.

- Moon is a luminous object. (False)
- We can clearly see through transparent material. (True)
- Shadow of opaque object is always black. (True)
- Light doesn't travel in straight line path. (False)
- Due to reflection of light, rooms are lighted up during day time though no direct sunlight enters the room. (True)

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

- | A | B |
|-------------------------------------|--------------------------------------|
| 1. Natural source of light | a. Light moves along a straight path |
| 2. CFL, LED and tube light | b. Opaque object |
| 3. Rectilinear propagation of light | c. Shadow cast by a heavenly body |
| 4. Eclipse | d. Man-made source of light |
| 5. Cardboard, wood and metal | e. Sun, stars and firefly |

Question 4. Choose The Correct Answer.

(i). Objects, like moon, which do not emit light of their own, are called

- Luminous objects
- Absorbers of light
- Non-luminous objects (✓)
- Reflectors of light

(ii). An object, through which we can see partially, but not very clearly, is

- A rubber ball
- A sheet of plane glass
- A sheet of tracing paper (✓)
- A compact disc

(iii). When Sun (during evening) is behind an object, the size of its shadow in comparison to that of the object would be

- Smaller
- Larger (✓)
- Almost zero
- Equal

(iv). The image, formed by a pin hole camera, is

- Inverted and diminished (✓)
- Inverted and enlarged

c) Erect and enlarged

d) Erect and diminished

(v). For shadow formation, we require :

a) An opaque object b) A source of light c) The screen to obtain the shadow d) All of the above (✓)

Question 5- Very Short Answer Type Questions.

(i) State the type of path that light ordinarily follows while going from one point to another.

Answer- Straight line path.

(ii) Fishes do not cast shadow in water. Why?

Answer- Due to absence of a screen at proper distance.

(iii) State the relative position of Sun, Earth and the Moon during solar eclipse.

Answer- During solar eclipse moon is between sun and earth.

(iv) In a completely dark room, if you hold a mirror in front of you, will you see a reflection of yourself in the mirror?

Answer- No.

(v) Two identical bed sheets, of pink and grey colour are hanging on a rope under the Sun. What would be the colour of shadow of these two bed sheets?

Answer- Black.

Question 6- Short Answer Type Questions.

(i) What is regular reflection?

Answer- When light falls on polished or shining surface like plane mirror, these surfaces reflect light in a well defined regular manner, this is called regular reflection. Sometimes regular reflection also forms images.

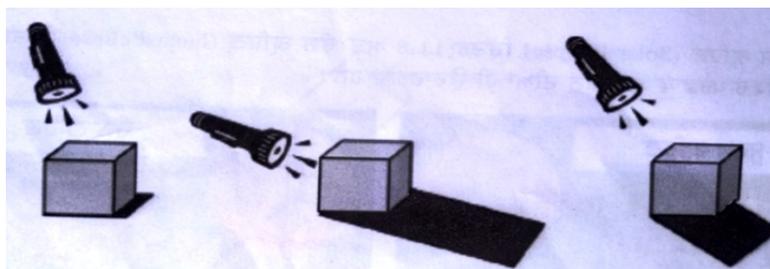
(ii) Why shadow in afternoon is smaller than shadow formed in the morning?

Answer- In afternoon the Sun is above the object, so forms a smaller shadow. In morning sunlight falls obliquely and forms larger shadow.

Question 7- Long Answer Type Questions.

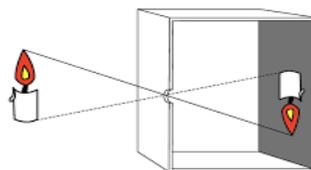
(i) Using suitable diagrams show that size of shadow formed, depends on relative position of the source of light and the opaque object.

Answer-



(ii) Using diagram, show the formation of image by pinhole camera.

Answer-



CHAPTER 13 – FUN WITH MAGNETS

ACTIVITY- 1: To separate magnetic and non-magnetic materials. (Page No.- 135)

Question 1- Materials attracted by a magnet are called _____ (Magnetic/Non-magnetic).

Answer- Magnetic.

Question 2- Materials not attracted by a magnet are called _____ (Magnetic/Non-magnetic).

Answer- Non-magnetic.

ACTIVITY- 3 : A freely suspended bar magnet always comes to rest in North-South direction. (Page No.- 136)

Question 1- A freely suspended bar magnet always points towards direction:

(a) North-South (✓)

(b) East-west

ACTIVITY- 4: To locate the position of magnetic poles. (Page No.- 137, 138)

Question 1- The poles of a bar magnet are _____ to its ends. (Near/far)

Answer- Near.

Question 2- Bar magnet has _____ poles.

Answer- Two.

ACTIVITY- 6: Make your own Compass. (Page No.- 138, 139)

Question 1- Magnetic compass is a device to find the _____ of earth. (directions / time)

Answer- Directions.

ACTIVITY- 7: Attraction and repulsion between magnets. (Page No.- 139, 140)

Question 1- Like poles of two magnets _____ each other. (Repel, Attract)

Answer- Repel.

Question 2- Unlike poles of two magnets _____ each other. (Repel, Attract)

Answer- Attract.

EXERCISE

Question 1- Fill In The Blanks.

- Magnetite is natural magnet.
- Plastic is not a magnetic material.
- A magnet has two poles.
- The poles of a bar magnet are at its ends.
- Compass is used for finding directions on earth.

Question 2- Write True Or False.

- Poles of a magnet can be separated. (False)
- A magnet does not attract glass material.. (True)
- Magnet can damage memory devices. (True)
- Magnetic compass always point towards East-West direction. (False)
- Magnets lose their property on hammering. (True)

Question 3- Match The Column:-

Column A

Column B

CHAPTER 14 – WATER

ACTIVITY-1: To estimate the quantity of water used.

(Page No.- 144, 145)

Question 1- Does every person use same quantity of water every day?

Answer- No.

ACTIVITY- 2: Inter-conversion of three states of water.

(Page No.- 146)

Question 1- What happens to ice-cream when it is taken out of the refrigerator?

Answer- Ice-cream melts and converts into liquid form.

Question 2- What is the state of ice-cream?

Answer- Solid.

ACTIVITY- 3: Evaporation of water in clothes.

(Page No.- 147)

Question 1- What happens when you spill water on the floor in hot summer days?

Answer- Water evaporates in the air.

Question 2- Why cow dung cakes are kept in sunlight?

Answer- To evaporate the water content in cow dung cakes, so that they dry up.

ACTIVITY- 4: To understand condensation of water.

(Page No.- 148)

Question 1- Why do we observe water droplets outside water bottle when taken out from a refrigerator?

Answer- Due to condensation of atmospheric water vapours on touching cool water bottle.

EXERCISE

Question 1- Fill In The Blanks.

- The process of changing of water into its vapour is called evaporation.
- The process of changing water vapour into water is called condensation.
- No rainfall for a year or more may lead to drought in that region.
- Excessive rains may cause flood.
- Three states of water are solid, liquid and gas.
- In plants, transpiration takes place through stomata.

Question 2- Write True Or False.

- Ice on cooling changes to steam. (False)
- Evaporation of water takes place in sunlight. (True)
- We should not repair the pipe having leakage. (False)
- Water in ocean is fit for drinking. (False)
- Drip irrigation method is useful for farming. (True)

Question 3- Match The Column:-

- | | |
|-----------------------|-------------------------|
| 1. Water conservation | a. Solid form of water |
| 2. Snow | b. Sunny day |
| 3. Precipitation | c. Rainwater harvesting |
| 4. Evaporation | d. Ground water |
| 5. Fresh water | e. Rain from clouds |

Question 4. Choose The Correct Answer.

(i). How much part of earth is covered with water?

- a) Two third (✓) b) Half c) One third d) Three fourth
- (ii). Fog appearing on a cold winter morning is the result of:
 a) Condensation (✓) b) Evaporation c) Precipitation d) None
- (iii). Which of the source of water is not used for drinking:
 a) River b) Ocean (✓) c) Dam d) Lake
- (iv). Process of conversion of gas to liquid is called:
 a) Evaporation b) Melting c) Condensation (✓) d) Boiling
- (v). About how much percentage of water is present in human body:
 a) 60% b) 70% (✓) c) 80% d) 90%

Question 5- Very Short Answer Type Questions.

(i) What are the main sources of water?

Answer- Rain, rivers and ground water.

(ii) What is the advantage of drip irrigation?

Answer- With drip irrigation water is saved.

(iii) What is the effect of temperature on evaporation?

Answer- Rate of evaporation increases with rise in temperature.

(iv) Differentiate between ground water and surface water.

Answer- Surface water exists in lakes, rivers and other water bodies. But ground water exists under the surface of earth.

(v) What is transpiration?

Answer- Transpiration is the process of releasing excess water by plants into air.

Question 6- Short Answer Type Questions.

(i) Explain floods and its effects.

Answer- An overflow of large amount of water due to heavy rain is known as flood.

- Effects of floods-
- (1). Many people and animals die during floods.
 - (2). Water supply and electricity are disrupted.
 - (3). Wide spread of communicable diseases.
 - (4). Roads, bridges, houses and automobiles are destroyed.

(ii) Define condensation. Give two examples?

Answer- The process of changing vapours into liquid form is called **condensation**. Examples: Formation of clouds and fog appearing on a cold winter morning.

(iii) Explain formation of clouds.

Answer- When the air moves up, it gets cooler and cooler. After reaching sufficient heights, the air becomes so cool that the water vapours present in it condenses to form tiny drops of water called droplets which remain floating in air and thus clouds are formed.

(iv) Write three ways to conserve water.

- Answer-
- (1) Use drip irrigation method.
 - (2). Rain water harvesting.
 - (3). Stopping the leakage of water pipes and taps as soon as possible.

(v) What is drought and what are its effects?

Answer- Very low rainfall over a prolonged period is called drought.

- Effects of drought-
- (1). It leads to the death of many animals.

- (2). Plant life is affected.
- (3). It leads to shortage of water and food.

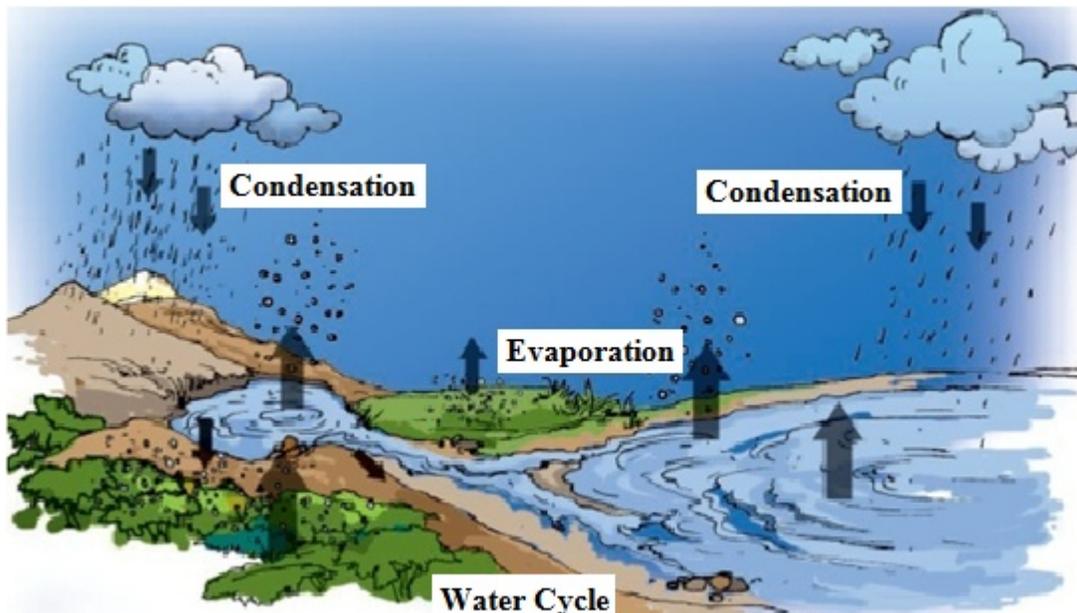
Question 7- Long Answer Type Questions.

(i) Explain the uses of water.

- Answer-**
- (1). About 70% of human body consists of water.
 - (2). Water helps to control our body temperature.
 - (3). Water helps to excrete waste products from our body.
 - (4). Water is important for growth of plants.
 - (5). Water maintains the temperature of earth.
 - (6). Water is essential for our many daily life activities.

(ii) Explain water cycle with diagram.

Answer- Water cycle is a cyclic process in which water is circulated between the earth and the atmosphere. In the presence of sunlight, water from water bodies like ocean, lakes, rivers etc. evaporates. This process is known as evaporation. These water vapours make clouds at heights by condensation. From clouds water falls back to earth in form of rain and snow.



(iii) Why there is need to conserve water? Write techniques of rain water harvesting.

Answer- Fresh clean water is available in limited amount. With rising population, the demand of water is increasing day by day. So it is the need to conserve water and use it carefully.

Techniques of rain water harvesting- (1). Rain water is collected on the roof of the house or building. It is then stored in storage tanks. This water can be used as per requirement.

- (2). Rainwater is allowed to go into the ground directly to recharge ground water.

CHAPTER 15 – AIR AROUND US

EXERCISE

Question 1- Fill In The Blanks.

- Plants gives out oxygen gas and breathe in carbon dioxide gas.
- Nitrogen gas cannot be used directly from the atmosphere.
- Earth is protected from the harmful rays of sun by ozone layer.
- Atmosphere is important for the water cycle.

Question 2- Write True Or False.

- Oxygen gas protects us from the harmful UV rays of the sun. (False)
- Carbon dioxide gas is required for the burning of fuel. (False)
- Composition of air always remain the same. (False)
- Air contains equal amount of oxygen and nitrogen. (False)
- Aquatic animals breathe carbon dioxide which is dissolved in water. (False)

Question 3- Match The Column:-

Column A	Column B
1. Most abundant gas in the air	a. Ozone
2. Gas required for photosynthesis	b. Water vapour
3. Gas used for respiration	c. Carbon dioxide
4. Form of water present in the air	d. Nitrogen
5. Layer that protect us from harmful rays of the sun	e. Oxygen

Question 4. Choose The Correct Answer.

(i). Air contains highest percentage of which gas?

- Oxygen
- Nitrogen (✓)
- Smoke
- Carbon dioxide

(ii). Which gas is a supporter of combustion?

- Nitrogen
- Carbon dioxide
- Smoke
- Oxygen (✓)

(iii). Moving air is known as:

- Wind (✓)
- Water vapour
- Ozone
- Wind mill

(iv). Earthworms come out of soil during:

- Heavy rains (✓)
- Cold weather
- Snow
- Hot weather

Question 5- Very Short Answer Type Questions.

(i) Which gas is essential for breathing of animals?

Answer- Oxygen.

(ii) Name one component of air that does not support burning.

Answer- Carbon dioxide.

(iii) Name the components of air.

Answer- Air consists of various gases like nitrogen (78%), oxygen (21%), carbon dioxide (0.03%), some noble gases and water vapours etc.

Question 6- Short Answer Type Questions.

(i) Which gas in the atmosphere is essential for respiration?

Answer- Oxygen gas.

(ii) Why does a lump of cotton wool shrink in water?

Answer- Lump of cotton wool has air among gaps of cotton fibres. When water replaces the air from these gaps, the cotton lump becomes heavy and also shrinks due to removal of air gaps..

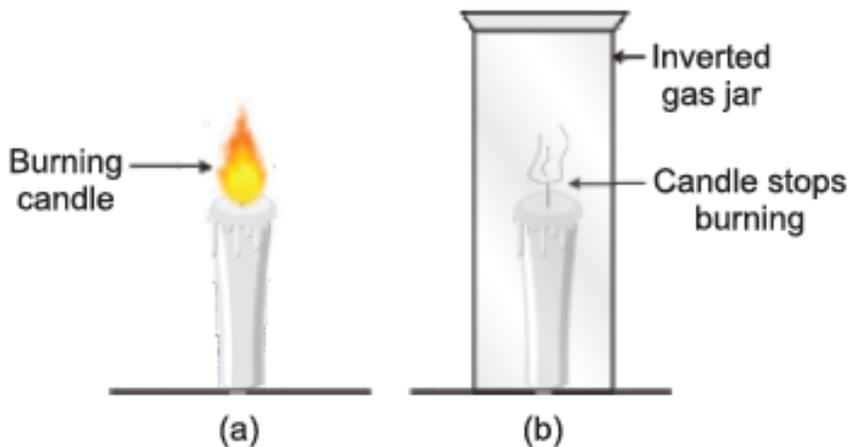
(iii) How will you show that air dissolves in water?

Answer- Heat the glass vessel filled with water. Before they start boiling bubbles occur, these bubbles are due to air present in water. This experiment concludes air is present in the water.

Question 7- Long Answer Type Questions.

(i) How will you show that air supports burning?

Answer- (a) Take a small burning candle. (b) Cover the burning candle with a glass jar. After few minutes the candle is extinguished. This experiment proves that air supports burning.



(ii) How is the balance of carbon dioxide and oxygen gases are maintained in the atmosphere?

Answer- Animals and plants use oxygen from air during respiration and release carbon dioxide gas in air. But green plants release oxygen gas by using carbon dioxide during photosynthesis.

CHAPTER 16- GARBAGE MANAGEMENT

DISPOSAL

ACTIVITY- 1: To observe and list the waste originated from your school and house for a week and record your observations. (Page No.- 163, 164)

Question 1- Vegetable peels are _____ waste. (Biodegradable/Non-biodegradable)

Answer- Biodegradable.

Question 2- Glass is a _____ waste. (Biodegradable/Non-biodegradable)

Answer- Non-Biodegradable.

Question 3- Plant leaves are _____ waste. (Biodegradable/Non-biodegradable)

Answer- Biodegradable.

ACTIVITY- 2: To make compost pit in your school. (Page No.- 165)

Question 1- Compost is rich in nutrients. (True/False)

Answer- True.

Question 2- We can use non-biodegradable waste in composting. (True/False)

Answer- False.

ACTIVITY- 3: To prepare vermin-compost pit in your school. (Page No.- 165)

Question 1- Vermi-composting is done by _____.

Answer- Red worms.

Question 2- Kitchen waste (biodegradable waste) is used in vermin-composting. (True/False)

Answer- True.

ACTIVITY- 4: To make your own recycled paper. (Page No.- 167)

Question 1- We can also recycle glass and metals to useful product. (True/False)

Answer- True.

Question 2- The process of changing the waste and non-useable materials into useful material is called recycling. (True/False)

Answer- True.

EXERCISE

Question 1- Fill In The Blanks.

- Solid waste is commonly called garbage.
- Plastic is a non-biodegradable material.
- Composting done by earthworms is called vermi-composting.
- Blue dustbin is used for collecting non-biodegradable waste.

Question 2- Write True Or False.

- Green dustbin is used for collecting non-biodegradable waste. (False)
- Biomedical wastes are hazardous and infectious. (True)
- A large, low lying area used to dispose off garbage is known as a dump. (True)
- Landfill site is ideal for making parks and playgrounds. (True)

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

- | A | B |
|-----------------------|---------------------------|
| 1. Biomedical waste | a. Fly ash |
| 2. Industrial waste | b. Medicines and syringes |
| 3. Domestic waste | c. Paddy husk |
| 4. Agricultural waste | d. Vegetable peels |

Question 4. Choose The Correct Answer.**(i). Hospital waste is generally:**

- | | |
|-----------------------|--------------------|
| a) Recycled | b) Incinerated (✓) |
| c) Dumped in landfill | d) Composted |

(ii). The earthworms used for composting are called:

- | | |
|-----------------|---------------|
| a) Redworms (✓) | b) Blueworms |
| c) Greenworms | d) Whiteworms |

(iii). _____ is a non-biodegradable waste.

- | | |
|---------------------|----------------|
| a) Plastic (✓) | b) Paper |
| c) Vegetable matter | d) Animal dung |

(iv). We can recycle _____

- | | |
|------------|------------|
| a) Glass | b) Metals |
| c) Plastic | d) All (✓) |

Question 5- Very Short Answer Type Questions.**(i) What is meant by dump?****Answer-** A large, low lying area used to dispose off garbage is known as a dump.**(ii) What type of garbage is collected in blue dustbin and green dustbin?****Answer-** Blue dustbin :- Non-biodegradable,
Green dustbin :- Biodegradable.**(iii) What is meant by recycling?****Answer-** Recycling is the conversion of waste material in usable form.**Question 6- Short Answer Type Questions.****(i) Distinguish between biodegradable and non-biodegradable waste.****Answer-**

Biodegradable Waste	Non-biodegradable Waste
1. The waste materials that can be decomposed by microorganisms.	1. The waste materials that cannot be decomposed easily.
2. For example- paper and vegetable peels.	2. For example- Plastic and glass.

(ii) What is vermin-composting? How is it done?**Answer-** The method of preparing compost with the help of earthworms is called vermi-composting. The redworms eat the bio-degradable waste material along with soil and convert it into compost. This is done in a pit.**Question 7- Long Answer Type Questions.****(i) Explain how plastic is a boon?**

Answer- Plastic containers are lightweight, flexible, low cost and water resistant. So, plastic containers have replaced the glass and metallic containers. The plastic bags are reusable and can be recycled. Plastic is used for making lightweight furniture, toys, lab equipments, syringes, bottles, boxes etc. Hence we can say that plastic is a boon.

(ii) List various methods of garbage disposal. Explain any one.

Answer- There are three important methods of disposal of garbage – Composting, Landfill and Incineration.

Incineration- The process of burning of waste in specially designed furnaces is called incineration. Hospital waste is generally disposed off in this way. This method has some disadvantages too. This process produces harmful gases which pollute our environment.

(iii) Explain the 4R's.

Answer- (1) Reuse- Reuse means to use again. Instead of throwing away an item we can use the item in various efficient ways. We can use empty jars and bottles as containers like pen stand, flower pot and storing things. We can reuse things after repair.

(2) Reduce- We should reduce the use of waste producing items.

(3) Recycle- Recycling is the conversion of waste material in usable form. We can recycle old newspaper into cardboard.

(4) Refuse- We should refuse to take plastic and polythene bags while shopping. We can use cloth-bag instead of polythene bag.