Date:_____

पु॰ना International School

Shree Swaminarayan Gurukul, Zundal

Class –VI

SCIENCE

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Date:_____

INDEX

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CHAPTER – 1

Food: Where Does it Come From?

Keywords

- Food: Nutritious substance that people or animals eat or drink, or that plants absorb. In order to maintain life and growth.
- food is essential for both plants and animals.

USES OF FOOD IN OUR BODY

- For energy
- for growth
- for body functions
- for wounds healing
- for good health

PLANT SOURCE OF FOOD

(A) parts of the plants as a source of food

1. plant roots .Ex. Carrot,Turnip,Radish,Beetroot.
2. Plant stems : Ex. Potato, Coriander and sugarcane.
3. plant leaves : Ex. spinach, cabbage, onion.
4. Fruits used as vegetable : Brinjal,tomato,gourd,beans
5. Seeds :Cereals(grains)and seeds : paddy(rice),maize(corn),wheat

(B) FOOD THAT COMES FROM ANIMALS

1. MILK;
2. EGGS
3. MEAT FROM ANIMALS
4. FISH,PRAWNS,CRABS

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5. HONEY

VERY SHORT ANSWER QUESTIONS

1. Why do boiled seeds fail to sprout?

Ans. Boiling of seeds kills certain enzymes that are required for germination due to which they cannot germinate and hence fails to sprout.

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2. Where do bees store honey?

Ans. Bees form honey by collecting nectar. They store this nectar in their beehives.

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3. Name two ingredients in our food that are not obtained from plants or animals. Mention one source for each ingredient.

Ans. Ingredients of food that are not obtained from plants and animals are salt and water.

Salt is obtained after processing of sea water and rock. Whereas water is obtained from wells, rivers, lakes, ponds etc

SHORT ANSWER QUESTIONS

1. Why should we avoid wastage of food?

Ans. We should avoid wastage of food because:

(i) Enough food is not available for all of us.

(ii) Food is very costly and poor people cannot afford to buy.

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2. Why do organisms need food? Write two reasons.

Ans. Food gives energy to do work, grow, repair damaged parts and protect the body against diseases.

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3. Match the organisms given in Column I with their part/product in Column II that is used by human beings as food.

Column I	**Column II**
(a) Mustard plant	(i) meat
(b) Goat	(ii) fruits and vegetable
(c) Hen	(iii) seed
(d) Smoke	(iv) direction of air flow
(e) Wind	(v) present dust particles

Ans. a-(iii), b-(i), c-(iv), d-(v), e-(ii).

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4. Label and colour the different parts of the plant given below in Fig. 1.2:

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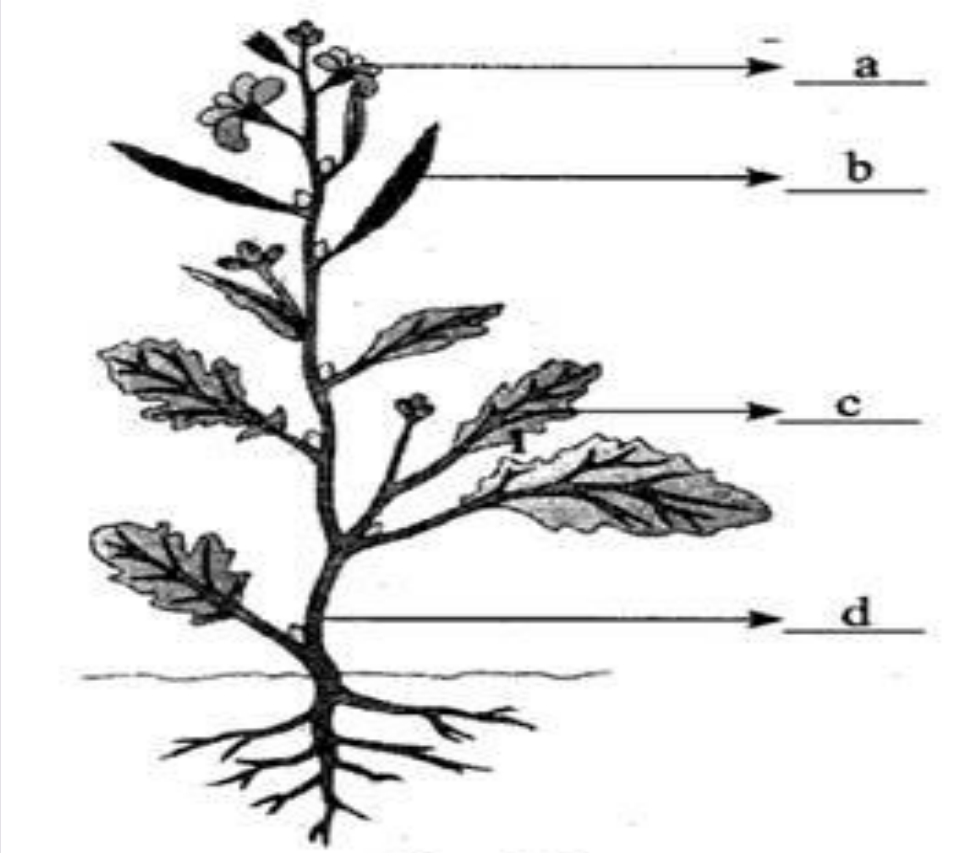

Fig. 1.2

Ans. a- Flower

b- Bud

c- Leaf

d-Stem

Textual Exercise:

Question 1. Do you find that all living beings need the same kind of food?

Answer: No, all living beings do not need the same kind of food. We know that different organisms eat different kind of food. This is because of the difference in their structure, requirements, habitats etc.,

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Question 2. Name five plants and their parts that we eat.

Answer:

(a) Apple tree	Fruit
(b) Wheat plant	Seed
(c) Potato plant	Stem
(d) Beetroot plant	Root
(e) Spinach	Leaves

Question 3. Match the items given in column A with that in column B.

Column A	Column B
Milk, curd, paneer, ghee	Eat other animals
Spinach, cauliflower, carrot	Eat plants and plant products.
Lion and tiger	Are vegetables
Herbivores	Are all animal products.

Answer:

Column A	Column B
Milk, curd, paneer, ghee	Are all animal products.
Spinach, cauliflower, carrot	Are vegetables
Lion and tiger	Eat other animals
Herbivores	Eat plants and plant products.

Question 4. Fill up the blanks with the words given:

Herbivore, plant, milk, sugarcane, carnivore.

(a) Tiger is a ---------- because it eats only meat.
(b) Deer eats only plants products and so, is called ----------.
(c) Parrot eats only ---------- products.
(d) The --------- that we drink, which comes from cows, buffaloes and goats is an animal

product.
(e) We get sugar from ----------.

Answer: (a) Tiger is a **carnivore** because it eats only meat.
(b) Deer eats only plants products and so, is called **herbivores**.
(c) Parrot eats only **plant** products.
(d) The **milk** that we drink, which comes from cows, buffaloes and goats is an animal product.
(e) We get sugar from **sugarcane**.

CHAPTER – 2
Components of Food

KEYPOINTS:

- **Nutrients:** Food substances that provide nourishment to the body.
- The major nutrients in our food are carbohydrates, proteins, fats, vitamins and minerals. In addition, food also contains dietary fibres and water.
- Carbohydrates and fats mainly provide energy to our body.
- Carbohydrates : cellulose, starch and sugar.
- **Carbohydrates:** These are energy-giving compounds. There may be simple carbohydrates or complex carbohydrates.
- Sources of fats : animal fats and vegetable fats.
- **Fats:** These are very high energy-giving compounds compounds. They produce greater amount of energy than carbohydrates.
- Carbohydrates and fats are Energy giving food.
- **Minerals:** These are elements required by the body in small amounts. It is essential for growth and development of bones, teeth and red blood cells.
- **Proteins:** These are body-building foods. They help in growth of the body.
- **Vitamins:** These are organic substances that protect the body from diseases.
- **Roughage:** It is the dietary fibre present in the food. It facilitates regular movement of the bowels and prevents constipation.

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- Dietary fibre and water are not food.
- **Balanced diet:** It provides all the nutrients that our body needs, in right quantities, along with adequate amount of roughage and water.
- **Deficiency Diseases:** These are the diseases cause due to the lack of required nutrients for a long period in the diet.
- **malnutrition :** when a person eats enough of food but his diet is unbalanced, it is known as malnutrition.
- **Undernutrition** : A person not eating sufficient food to maintain good health is suffering from undernutrition.

Some Nutrients Deficiency Diseases are:

1. **Protein: Kwashiorkar** - Stunted growth, thinning of legs, protruding belly.
2. **Protein and Carbohydrates – Marasmus** – Complete/partial arrest of growth, lack of energy.
3. **Vitamin D and calcium : Rickets –** Bowed legs, bent spine, deofmed bones are joints.
4. **Vitamin C: Scurvy** – Bleeding and swelling of gums, weakness.
5. **Iodine: Goitre** – Enlargement of thyroid gland, retarded growth.
6. **Iron – Anaemia** – Fatigue, loss of appetite, pale skin.
7. **Vitamin K : -Bleeding disease-** delay in blood clotting leads to excess bleeding.
8. **Beri-beri : - Vitamin B_1** . weakness in muscles, little energy to do work, paralysis
9. **Night blindness - Vitamin A** - No vision at night or in dim light.

VERY SHORT ANSWER QUESTIONS

1. Which of the food item does not provide dietary fibre?

Ans. Milk does not provide dietary fibres. It provides proteins and calcium.

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2. Which of the following sources of protein is different from others?

(a) Peas
(b) Gram
(c) Soyabeans
(d) Cottage cheese (paneer)

Ans. Paneer also provides protein but it is different from other sources mentioned in the option because all others are pulses but paneer is a milk product.

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3. Which of the nutrients is not present in milk?

Ans. Vitamin C is not present in milk.

4.Which of the food items are "energy giving foods"?

Ans. The food containing carbohydrates and fats are energy giving food items.

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5. Read the following statements about diseases.

(i) They are caused by germs.
(ii) They are caused due to lack of nutrients in our diet.
(iii) They can be passed on to another person through contact.
(iv) They can be prevented by taking a balanced diet.

Which pair of statements best describe a deficiency disease?

(a) (i) and (ii)
(b) (ii) and (iii)

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(c) (ii) and (iv)
(d) (i) and (iii)

Ans. (c) Deficiency diseases are caused due to the lack of certain nutrients in body. Therefore, it is always recommended to consume balance diet.

SHORT ANSWER QUESTIONS

1. Tasty food is not always nutritious and nutritious food may not always be tasty to eat. Comment with examples.

Ans. Potato chips are tasty but they are not very nutritious.

Boiled vegetables are very nutritious but they may not be tasty.

2. While using iodine in the laboratory, some drops of iodine fell on Paheli's socks and some fell on her teacher's saree. The drops of iodine on the saree turned blue black while their colour did not change on the socks. What can be the possible reason?

Ans. Thesaree of Paheli's teacher might have been starched, and starch turns blue black with iodine solution. Paheli's socks did not have starch on it thereby showing no change.

3. Paheli and Boojho peeled some potatoes and cut them into small pieces. They washed and boiled them in water. They threw away the excess water and fried them in oil adding salt and spices. Although the potato dish tasted very good, its nutrient value was less. Suggest a method of cooking potatoes that will not lower the nutrients in them.

Ans. Wash, peel, cut and cook the potatoes. Cooking in a small amount of water and then frying in a small quantity of oil conserves the nutrients.

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4. Paheli avoids eating vegetables but likes to eat biscuits, noodles and white bread. She frequently complains of stomachache and constipation. What are the food items that she should include in her diet to get rid of the problem? Give reason for your answer.

Ans. Paheli must include whole grains, whole pulses, fresh fruits and vegetables in her diet as she seems to lack roughage.

5. (a) List all those components of food that provide nutrients.

(b) Mention two components of food that do not provide nutrients.

Ans.(a) Components of food that provide nutrients are carbohydrates, proteins, fats, vitamins and minerals.

(b) Components of food that do not provide nutrients are water and roughage/dietary fibres.

LONG ANSWER QUESTIONS

1. 'Minerals and vitamins are needed in very small quantities by our body as compared to other components, yet, they are an important part of a balanced diet.' Explain the statement.

Ans. Vitamins and minerals are very important because they help in

(a) protecting our body against diseases.

(b) growth.

(c) maintaining good health

2. 'Water does not provide nutrients, yet it is an important component of food. 'Explain?

Ans. Water helps our body to absorb nutrients from food and also helps in removing wastes such as urine and sweat.

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3. Given below are the steps to test the presence of proteins in a food item:

(i) Take a small quantity of the food item in a test tube, add 10 drops of water to it and shake it.
(ii) Make a paste or powder of food to be tested.
(iii) Add 10 drops of caustic soda solution to the test tube and shake well.
(iv) Add 2 drops of copper sulphate solution to it.

4. Which of the following food items does not provide any nutrient?

Milk, Water, Orange juice, Tomato Soup

Ans. Out of the options given orange juice and tomato soup provides citric acid. Milk provides proteins and calcium. But water does not provide any nutrient.

Textual Exercise:

Question 1. Name the major nutrients in our food.
Answer: The major nutrients in our food are carbohydrates, proteins, fats, vitamins, minerals, roughage and water are essential nutrients for our body.

Question 2. Name the following:

(a)The nutrients which mainly give energy to our body.
(b)The nutrients that are needed for the growth and maintenance of our body.
(c) A vitamin required for maintaining good eyesight.
(d) A mineral that is required for keeping our bones healthy.

Answer: (a) Carbohydrates and fats.

(b) Proteins
(c) Vitamin A
(d) Calcium

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Question 3. Name two foods each rich in:

(a) Fats (b) Starch (c) Dietary fibre (d) Protein

Answer: (a) Butter, Groundnut.
(b) Rice, Potato.
(c) All grains, Fresh fruits.
(d) Milk, Fish.

Question 4. Tick (√) the statements that are correct.

(a) By eating rice alone, we can fulfill nutritional requirement of our body.
(b) Deficiency diseases can be prevented by eating a balanced diet.
(c) Balanced diet for the body should contain a variety of food items.
(d) Meat alone is sufficient to provide all nutrients to the body.

Answer: (a) By eating rice alone, we can fulfill nutritional requirement of our body. X
(b) Deficiency diseases can be prevented by eating a variety of food

items.√
(c) Balanced diet for the body should contain a variety of food items. √
(d) Meat alone is sufficient to provide all nutrients to the body.X

Question 5. Fill in the blanks.

(a) --------- is caused by deficiency of vitamin D.
(b) Deficiency of ---------- causes a disease known as Beri-beri.
(c) Deficiency of vitamin C causes disease known as ----------.
(d) Night blindness is caused due to deficiency of ---------- in our food.

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Answer: (a) Rickets is caused by deficiency of vitamin D.
(b) Deficiency of **vitamin B1** causes a disease known as Beri-beri.
(c) Deficiency of vitamin C causes disease known as **scurvy**.
(d) Night blindness is caused due to deficiency of **vitamin A** in our food.

CHAPTER – 3
Fibre to Fabric

Keypoints:

FIBRE : Fibre is a fine thread-like filament.
There are two types of fibres:

(a) Natural Fibres: The fibres which are obtained from plants and animals. Example: cotton, jute, silk and wool.
(b) Synthetic Fibres: are made from chemicals substance.syntheticfibres are manmade fibre. They are also called artificial fobres.. Examples: rayon, nylon, polyester, etc.

Fibres from plant sources:

1. **Cotton**: cotton comes from cotton lant. Both , plant and the fibre are called cotton.cotton is grown in black soil and warm climate.
2. **Jute**: jute is obtained from stem of jute plant.

PROCESSING OF COTTON FIBRE

1. **Ginning :-** Removal of seeds from fibre.

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2. **Spinning :-** drawing yarn thread from cotton fibre.

3. **Weaving :-** making cloth or fabric from yarn.

PROCESSING OF JUTE

1. **Retting of plant :-** After harvesting the jute plants (stalks) are retted (soaked) in water for 10 to 15 days or more. retting soften the rest of the stem tissues other than fibres.
2. **Stripping :-** The stalks are stripped to bring out the fibres. This is done by hand.
3. **washing and drying :-** The stripped fibres are washed and dried in sun.

Fibres from animal sources:

(a) Wool: wool cloth is spun from yarn made from the fibres of the thick fleece of sheep.
(b) Silk: silk thread is obtained from the saliva of an insect called silkworm.

VERY SHORT ANSWER QUESTIONS

1. Yarn, fabric and fibres are related to each other. Show therelationship

Ans. Fabric of cotton saree is made by weaving cotton **yarn** which in turn is made by spinning thin cotton **fibres**.

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2.However, the other did not shrink on burning. Can you help her to find out which of the two was a cotton fabric and which a silk fabric?

Ans. Cotton fabric does not shrink but silk fabric shrinks on burning

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3. One way of making fabric from yarn is weaving, what is the other?

Ans. The other method of making fabric from yarn is knitting.

SHORT ANSWER QUESTIONS

Q-1: Explain the PROCESSING OF COTTON FIBRE

1. Ginning :- Removal of seeds from fibre.

2.**Spinning :-** drawing yarn thread from cotton fibre.

3. Weaving :- making cloth or fabric from yarn.

Q-2: Explain the PROCESSING OF JUTE

1.Retting of plant :- After harvesting the jute plants (stalks) are retted (soaked) in water for 10 to 15 days or more. retting soften the rest of the stem tissues other than fibres.

2.Stripping :- The stalks are stripped to bring out the fibres. This is done by hand.

3.washing and drying :- The stripped fibres are washed and dried in sun.

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Q-3: Which Fibres we get from animal sources:

(a) Wool: wool cloth is spun from yarn made from the fibres of the thick fleece of sheep.
(b) Silk: silk thread is obtained from the saliva of an insect called silkworm.

LONG ANSWER QUESTIONS

Ques-1. Explain the Processing of wool: It involves four steps:

1. **Shearing**: The process of removal of wool from the sheep's skin.
2. **Grading**: The process of separating fleece from damaged wool.
3. **Carding**: The process after the wool has been washed and dried, it is passed through the rollers (that have teeth).
4. **Spinning**: The process by which fibrs are gathered together and drawn into a long rope and then twisted to make yarn.

Ques-2:ExplainMaking Fabric from Yarn: It is done by two processes:
(a) Weaving: The process by two sets of yarns are arranged together to form fabric. It is done on looms.
weaving involves placing two sets of threads or yarn made of fibre, calle the **warp** and **weft** of the loom.
The **warps** are drawn tight in paralllel order, with the **weft** being interplaced at rught angles to the warps.
(b) Knitting: The process by which a single yarn is used to make fabric. It is done by hand or machines

Textual exercise:

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Question 1. Classify the following fibres as neutral or synthetic:

Nylon, wool, silk, polyester, jute.

Answer:

Natural Fibre	**Synthetic Fibre**
Wool, Cotton, Silk, Jute	Nylon, Polyester

Question 2. State whether the following statements are true or false:

(a) Yarn is made from fibres.
(b) Spinning is a process of making fibres.
(c) Jute is outer covering of coconut.
(d) The process of removing seed from cotton is called ginning..
(e) Weaving of yarn makes a piece of fabric.
(f) Silk fibre is obtained from the stem of a plant.

Answer: (a) T, (b) F, (c) F, (d) T, (e) T, (f) F, (g) F

Question 3. Fill in the blanks:

(a) Plant fibres are obtained from ---------- and ----------.
(b) Animal fibres are ---------- and ----------.

Answer: (a) Plants fibres are obtained from **cotton plants** and **jute plants**.
(b) Animals fibres are **silk** and **wool**.

Question 4. From which parts of the plant cotton and jute are obtained?
Answer: Cotton – From fruit of the cotton plant.

Jute – From stem of jute plant.

Question 5. Name two items that are made from coconut fibre.
Answer: (i) Bags (ii) Rope.

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Question 6. Explain the process of making yarn from fibre.
Answer: The process of making yarn from fibres is called spinning. In this process, fibres from a mass of cotton were drawn out and twisted. This brings the fibres together to form a yarn.

CHAPTER – 4
Sorting Material into Groups

Keywords:

Matter : Anything that occupies space and has mass is called matter. Objects around us are made up of a large variety of materials.

Material : A material is a substance which is used for making things.

VERY SHORT ANSWER QUESTIONS

1. It was Paheli's birthday. Her grandmother gave her two gifts made of metals, one old dull silver spoon and a pair of lustrous gold earrings. She was surprised to see the difference in the appearance of the two metals. Can you explain the reason for this difference?
Ans. The silver spoon was old due to which it lost its shine and lustre on exposure to moist air for a long time. But gold remains unaffected by the presence of moist air and hence does not tarnish.

2. Mixtures of red chilli powder in water, butter in water, petrol in water, and honey in water were given to Radha, Sudha, Sofia and Raveena, respectively. Whose mixture is in solution form?
Ans. Raveena has got a solution because honey is completely soluble in water and hence gets easily dissolved in it and forms a pure solution.

3. On a bright sunny day, Shikha was playing hide and seek with her brother. She hid herself behind a glass door. Do you think her brother will be able to locate her.If yes, why?If no, why not?
Ans. Yes, her brother would be able to locate her because glass is either transparent or translucent and hence things can either be easily or partially seen through it.

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4. Take a small cotton ball and place it in a tumbler/bowl filled with water. Observe it for at least 10 minutes. Will it float or sink in water and why?

Ans. Cotton has air trapped in between its fibres when it is dry and hence floats in water. But when it absorbs water the gap occupied by air gets filled with water which increases its density and makes it heavier. As a result, the cotton ball sinks in water.

SHORT ANSWER QUESTIONS

1. Which among the following materials would you identify as soft materials and why?

Ice, rubber band, leaf, eraser, pencil, pearl, a piece of wooden board, cooked rice, pulses and fresh chapati.

Ans. Rubber band, leaf, eraser, cooked rice and fresh chapati are soft materials because they can easily be compressed or scratched.

2. You are provided with the following materials - turmeric, honey, mustard oil, water, glucose, rice flour, groundnut oil.

Make any three pairs of substances where one substance is soluble in the other and any three pairs of substances where one substance remains insoluble in the other substances.

Ans. Soluble(i) honey in water

(ii) glucose in water

(iii) groundnut oil in mustard oil

Insoluble(i) turmeric in water

(ii) rice flour in water

(iii) mustard oil in water

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3. Match the objects given in Column I with the materials given in Column II.

Column I		Column II	
(a)	Surgical Instruments	(i)	Plastic
(b)	Newspaper	(ii)	Animal product
(c)	Electrical switches_	(iii)	Steel
(d)	Wool	(iv)	Plant product

Ans. a- (iii), b- (iv), c- (i), d- (ii)

LONG ANSWER QUESTIONS

Ques-1: Write GENERAL PROPERTIES OF MATERIAL

(A) Appearance All metals are **lustrous** ,.

- wood, rubber or a piece of rock is **non-lustrous.**

(B) . Hardness Rocks, iron and many metals are **hard**.

- Hard materials may be :

1. Brittle , ex. rock,glass,salt.

2.Malleable : . metals are malleable.

3.Ductile :- they can be drawn into thin and long wires. metals are ductile.

(C) Through visibility :-

- Transarent.
- Transluscent
- Opaque

(D) Good and bad conductor of electricity :-

(D) Good and bad conductor of heat :-

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(E) combustible substances

(F) SOME MATERIAL MAY FLOAT AND SOME SINK IN WATER.

(G) SOLUBILITY O A SUBSTANCES IN WATER.

(H) Miscible and Immiscible Liquid :-

Textual Exercise:

Question 1. Name five objects which can be made from wood.

Answer: Objects made from wood:

(i) Table, (ii) Chair, (iii) Bullockart, (iv) Door, (v) Wooden box.

Question 2. Select those objects from the following which shine:

Steel, Spoon, Glass bowl.

Answer: The objects which shine from the following are:

(i) Steel spoon

(ii) Glass bowl.

Question 3. Match the objects given below with the materials from which they could be made. Remember, an object could be made from more than one material and given material could be used for making many objects.

Objects	Materials
Book	Glass
Tumbler	Wood
Chair	Paper

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Toy	Leather
Shoes	Plastic

Answer:

Objects	Materials
Book	Paper.
Tumbler	Glass, plastic
Chair	Wood, plastic.
Toy	Glass, wood, leather, plastic
Shoes	Leather.

Question 4. State whether the statements given below are true or false:

(i) Stone is transparent, while glass is opaque.
(ii) A note book has lustre while eraser does not.
(iii) Chalk dissolves in water.
(iv) A piece of wood floats on water.
(v) Sugar does not dissolve in water.
(vi) Oil mixes with water.
(vii) Sand settles down in water.
(viii) Vinegar dissolves in water.

Answer: (i)F, (ii)F, (iii)F, (iv)T, (v)F, (vi)F, (vii)T, (viii)T

Question 5. Given below are the names of some objects and materials:

Water, basketball, orange, sugar, globe, apple, and earthen pitcher. Group them as :

(a) Round shaped and other shaped

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(b) Eatables and non-eatables.

Answer:

Round shaped	Other shaped	Eatable	Non-eatable
Basketball		Water	
Orange	Apple	Orange	Basketball
Globe	Water	Sugar	Globe
Earthen pitcher	Sugar	Apple	Earthen pitcher

Question 6. List all items known to you that float on water. Check and see if they will float on oil or kerosene.

Answer: Items that float on water include:

(i) Plastic ball, (ii) Balloon, (iii) Feather, (iv) Matchstick, (v) Wood, (vi) Thermocole, (vii) Cane, (viii) Boat, (ixHair

They also float on oil or kerosene.

Question 7. Find the odd one out from the following:

(a) Chair, Bed, Table, Baby, Cupboard.
(b) Rose, Jasmine, Boat, Marigold, Lotus.
(c) Aluminium, Iron, Copper, Silver, Sand.
(d) Sugar, Salt, Sand, Milk, Milk powder.

Answer: (a) Baby, (b) Boat, (c) Sand, (d) Sand

CHAPTER – 5
Separation of Substances

Date:_____

KEYWORDS:

PURE SUBSTANCES: substances which contain only one kind of particles .

IMPURE SUBSTANCES: substances which contain more than one kind of particles.

ELEMENT: A substance made from identical particles of one material.

COMPOUND: A substance formed as a result of chemical combination of two or more elements in a fixed ratio.

SOLUTION:A solution is a mixture of two substances. the substance in larger quantity is the solvent and the other is the solute.

NEED FOR SEPARATING COMPONENT OF A MIXTURE

- **removing harmful or unwanted components, and**

  obtaining useful and desire component in pure form.

VERY SHORT ANSWER QUESTIONS

Q-1: Define Threshing:

Ans : The process of separating grain from husk or chaff is called threshing.

Q-2 : Define Winnowing:

Ans: The process of separation of heavier and lighter components of a mixture by wind or blowing air.

Q-3: Define Evaporation:

Ans: Process by which the conversion of liquid state into gaseous state on heating.

Q-4: Define Condensation:

Date:_____

Ans: Process by which conversion of gaseous state into liquid state on cooling.

SHORT ANSWER QUESTIONS

Q-1: Write methods through which we Separate solid from other solids:

Ans:(a) Threshing(b) Winnowing(c) Hand-picking(d) Sieving(e) Magnetic separation**:**

Q-2: How we Separate water soluble solids or solute soluble in solvent:

Ans:(a) Evaporation: Process by which the conversion of liquid state into gaseous state on heating.
(b) Condensation: Process by which conversion of gaseous state into liquid state on cooling.

Q-3:How we Separate insoluble solids from Liquids:

Ans:(a) Sedimentation**.**(b) Decantation(c) Loading**:** (d) Filtration**.**

TEXTUAL EXERCISE:

Question1. Why do we need to separate different components of mixture? Give two examples.

Answer: We need to separate different components of a mixture:

• to separate harmful or nonuseful substances that may be mixed with it.

• to separate even useful components if we need to use them separately.

Two examples are:

• Milk or curd is churned to separate the butter

• Grain is separated from stalks, while harvesting.

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Question2. What is winnowing? Where is it used?

Answer: Winnowing is the process of separating heavier and lighter components of mixture by wind or by blowing air.

This method is commonly used by farmers to separate lighter husk particles from heavier seeds grain.

Question3. How will you separate husk or dirt particles form a given sample of pulses before cooking?

Answer: Husk or dirt particles form pulses are separated by hand picking method.

Question4. What is sieving? Where is it used?

Answer: Sieving is a method of separation which allows the fine flour particles to pass through the holes of the sieve while the bigger impurities remain on the sieve. It is used at home to separate pebbles and stones from sand.

Question5. How will you separate sand and water from their mixture?

Answer: We can separate sand and water from their mixture by:

• Sedimentation and decantation: Being sand insoluble and heavier than water, it settles down at the bottom. Then after we can easily separate water from sand.

• Filtration: The mixture of sand and water is poured on a piece of cloth or filter paper so that water goes down through it and sand remains on the piece of cloth or paper.

Question6. Is it possible to separate sugar mixed with wheat flour? If yes, how will you do it?

Date:_____

Answer: Yes, it is possible to separate sugar mixed with wheat flour. This can be done through the process of sieving. The mixture of sugar and wheat flour is allowed to pass through a sieve. The fine wheat flour passes through the sieve while sugar remains on the sieve.

Question7. How would you obtain clear water from a sample of muddy water?

Answer: By the method of filtration, we can obtain clear water from a sample of muddy water. The sample of muddy water is passed through a filter paper. Clear water will pass through the filtering medium while mud will remain on filter paper.

Question8. Fill up the blanks:

(a) The method of separating seeds of paddy from its stalks is called ----------.
(b) When milk cooled after boiling, is poured onto a piece of cloth, the cream (malai) is left behind on it. This process of separating cream from milk is an example of --------.
(c) Salt is obtained from seawater by process of ----------.
(d) Impurities settled at the bottom when muddy water was kept overnight in a bucket. The clear water was then poured off from the top. The process of separation used in this example is called ----------.

Answer: (a) The method of separating seeds of paddy from its stalks is called **threshing**.
(b) When milk cooled after boiling, is poured onto a piece of cloth, the cream (malai) is left behind on it. This process of separating cream from milk is an example of f**iltration**.
(c) Salt is obtained from seawater by process of **evaporation**.
(d) Impurities settled at the bottom when muddy water was kept overnight in a bucket. The clear water was then poured off from the top. The process of separation used in this example is called **decantation**.

Question9. True or False?

Date:_____

(a) A mixture of milk and water can be separated by filtration.
(b) A mixture of powdered salt and sugar can be separated by the process of winnowing.
(c) Separation of sugar from tea can be done with filtration.
(d) Grain and husk can be separated with the process of decantation.

Answer: (a) F, (b) F, (c) T, (d) F

Question10. Lemonade is prepared by mixing lemon juice and sugar in water. You wish to add ice to cool it. Should you add ice to the lemonade before or after dissolving sugar? In which case would be possible to dissolve more sugar?

Answer: We should add ice after dissolving sugar because the dissolving power of water decreases with decrease in temperature. So, if we add ice before dissolving sugar, less amount of sugar will get dissolved.

CHAPTER – 6
Changes Around Us

KEYPOINTS:

(a) Reversible change: A change in which the initial substance can be obtained back by reversing the action. Example: folding of paper, dissolving sugar in water, etc.

(b) Non-irreversible change: Change in which the initial substance cannot be obtained back by reversing the action. Example: burign of paper, grinding grains etc.

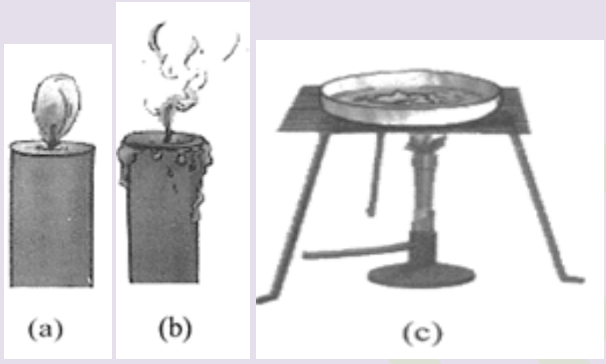
(c) Physical change: Changes in the form of substance but not in chemical identity. No new substance formed. Changes is sometimes reversible. Example: breaking a log of wood.

Date:_____

(d) Chemical changes: Changes in which substance is transformed into new substance. Initial substance is lost. Change is always irreversible. Example: burning a log of wood.

VERY SHORT ANSWER QUESTIONS

1. Look at Fig. 6. 1 which shows three situation (a) a burning candle (b) an extinguished candle (c) melting wax.



Which of these shows a reversible change and why?

Ans. Melting of wax is a reversible change because the wax once melted can be reversed back to solid form on cooling.

2. A piece of iron is heated till it becomes red-hot. It then becomes soft and is beaten to a desired shape. What kind of changes are observed in this process- reversible or irreversible?

Ans. The changes that are observed in this case are reversible. The iron once shaped into desired shape can again be heated and changed to different shape.

3. Paheli had bought a new bottle of pickle from the market. She tried to open the metal cap to taste it but could not do so. She then took a bowl of hot water and immersed the upper end of the bottle in it for five minutes. She could easily open the bottle now. Can you give the reason for this?

Date:_____

Ans. As we know metal like iron expands on heating. So, when it is dipped in a bowl of hot water the metal cap expands due to the heat and hence the cap easily opens

SHORT ANSWER QUESTIONS

1. Can we reverse the following changes? If yes, suggest the name of the method.

(a) Water into water vapour

(b) Water vapour into water.

(c) Ice into water.

(d) Curd into milk.

Ans. (a) Yes, condensation

(b) Yes, evaporation

(c) Yes, freezing

(d) Not possible

2. Which of the following changes cannot be reversed?

(a) Blowing of a balloon

(b) Folding a paper to make a toy Aeroplane

(c) Rolling a ball of dough to make roti

(d) Baking cake in an oven

(e) Drying a wet cloth

(f) Making biogas from cow dung

(g) Burning of a candle

Date:_____

Ans. (d), (f), (g) are the changes that cannot be reversed

3.Tearing of paper is said to be a change that cannot be reversed. What about paper recycling?

Ans. The paper obtained after paper recycling is not the same as the original paper. The colour, texture and the quality of the recycled paper changes and is inferior then the original paper.

LONG ANSWER QUESTIONS

Q-1: What are the ways through which changes occur?

Ans: Ways by which changes occur:

(a) Boiling and Condensation

(b) Heating of metal:

(c) Freezing and Melting:

(d) using pressure to change things

TEXTUAL EXERCISE:

Question 1. Walk through a waterlogged area, you usually shorten the length of your dress by folding it. Can this change be reversed?
Answer: Yes, this can be reversed by unfolding the folded clothes.

Question 2. You accidently dropped your favorite toy and broke it. This is a change you did not want. Can this change be reversed?
Answer: No, this change cannot be reversed.Breaking a toy is an irreversible change.

Question 3. Some changes are listed in the following table. For each change, write in the blank column whether the change can be reversed or not.

Date:_____

S No.	Change	Can be reversed Yes/No
1.	The sawing of a piece of wood.	
2.	The melting of ice candy	
3.	Dissolving sugar in water	
4.	The cooking of food	
5.	The ripening of mango	
6.	Souring of milk	

Answer:

S No.	Change	Can be reversed Yes/No
1.	The sawing of a piece of wood.	No
2.	The melting of ice candy	Yes
3.	Dissolving sugar in water	Yes
4.	The cooking of food	No
5.	The ripening of mango	No
6.	Souring of milk	No

Question 4. A drawing sheet changes when you draw a picture on it. Can you reverse this change?
Answer: We can reverse this change if the picture is made by pencil on drawing sheet. We can't reverse this change if the picture is made by pen, oil colour or sketch pen.

Date:_____

Question 5. Give example to explain the difference between changes that can or cannot be reversed.

Answer: (i) Paper can be folded to make different shapes. This is reversible change as shapes of paper can be unfolded back into paper sheet. But when paper is burnt and turned into ash, it can't be reversed.
(ii) If we fill balloon with air, the shape and size of the balloon changes. This change can be reversed but if balloon burst while inflating then this change can't be reversed.
(iii) The shape of rubber band can be changed by stretching which can be reversed

Question 6. A thick coating of paste of Plaster of Paris is applied over the bandage on a fractured bone. It becomes hard on drying to keep the fractured bone immobilized. Can the change in POP be reversed?
Answer: No, the change in plaster of Paris cannot be reversed as it became hard on drying and new product is formed.

Question 7. A bag of cement lying in the open gets wet due to rain during the night. The next day the sun shines brightly. Do you think the changes, which have occurred in the cement, could be reversed?
Answer: No, because this is an irreversible chemical change.

CHAPTER – 7
Getting to know Plants

KEYPOINTS:

Plants are usually grouped into herbs, shrubs, trees, creepers and climbers.
Herbs: Have soft, green and weak stems. Example: rice, wheat, maize, sunflower, mint, etc.
Shrubs: They are bushy and have hard stems that do not bend easily. These are plants with the stem branching out near the base. Example:

lemon, China rose, jasmine, Nerium, etc.
Trees: These are big plants which have a tall and strong stem (trunk). Stems have branches in the upper part, much above the ground. Live for many years. Example: mango, neem, banyan, coconut, etc.
Climbers: Have weak stems and cannot stand erect. They take the support of other trees and climb on them. Example: pea, grape, vine, etc.
Creepers: Plants which creep on the ground and spread out. Example: pumpkin and watermelon.

VERY SHORT ANSWER QUESTIONS

Q-1: Name the male parts of flower.

Ans: (a) Anther (b) Filament:

Q-2:Name the female part of flower.

Ans: The female organ of the flower. It consists three parts: Style, Stigma, and Ovary.

Q-3: Define Stamens: These are long, thin and needle-like structures. These are male organs of the flower. It consists of two parts: Anther, Filament.
Q-4: Define Carpel: It is a flask-shaped organ in the center of the flower. It is the female organ of the flower. It consists three parts: Style, Stigma, and Ovary.

SHORT ANSWER QUESTIONS

Q-1:What are the types of roots?

Ans: (a) Root system(i) Tap Root Example: mustard, neem, rose, etc.**(ii) Fibrous Root**. Example: wheat, maize, etc.

Q-2: Write functions of root system

Ans: Functions of root system:

Date:_____

(i) Roots absorb water and nutrients from the soil.
(ii) Roots help the plant to stand erect.
(iii) Roots check soil erosion.
(iv) Roots store food.
(v) Prop roots offer extra support.

Q-3:Write the function of leaf:
The function of Leaf:(i) Transpiration: Process of losing water by the leaves of a plant.
(ii) Preparation of food by the process of photosynthesis.

(iii) Flower: It is the reproductive organ of the plant.

Q-4: **Write the function of flowers:**

Ans: The function of Flowers**:**

(i) Help in reproduction.

(ii) These become fruits that store food and seeds.

(iii) Modified flowers like cauliflower, broccoli are rich sources of vitamins.

TEXTUAL EXERCISE:

Question 1. Correct the following statements and rewrite them in your notebook.

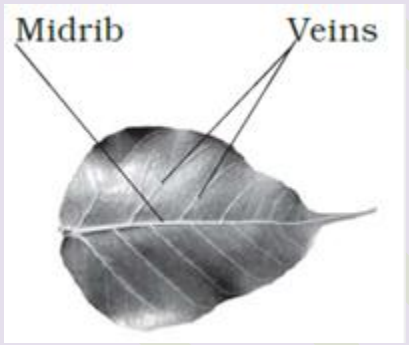
(a) Stem absorbs water and minerals from the soil.
(b) Leaves hold the plant upright.
(c) Roots conduct water to the leaves
(d) The number of petals and sepals in a flower is always equal.
(e) If the sepals of a flower are joined together, its petals are also joined together, its petals are also joined together.
(f) If the petals of a flower are joined together, then the pistil is joined to the petals.

Date:_____

Answer: The correct statements are
(a) Roots absorb water and minerals from the soil.
(b) Stem holds the plant upright.
(c) Stem conducts water to the leaves.
(d) The number of petals and sepals in a flower is usually the same.
(e) If the sepals of flower are joined together, its petals are not necessarily joined together.
(f) If the petals of a flower are joined together, then the pistil is not necessarily joined to the petals.

Question2. Draw (a) Leaf (b) A taproot (c) A flower, you have studied for Table 7.3.

Answer:




LeafTap root Flower

Question3. Can you find a plant in your house or in your neighborhood, which has a long but a weak stem? Write its name. In which category would you classify it?

Answer: Yes, Lauki (guard) plant. It needs support. It comes under the category of climber plant.

Question4. What is the function of a stem in a plant?

Answer: Function of stem:

(i) Gives support to plant.
(ii) Conducts water and minerals from roots to leaves.
(iii) Conducts food from leaves to other parts of the plant.

Question5. Which of the following leaves have reticulate venation?

Wheat,Tulsi, Maize, Grass,Coriander(dhania), China rose.

Answer: Tulsi, Coriander(dhania) and China rose have reticulate venation.

Question6. If a plant has fibrous root, what types of veneration do its leaves likely to have?

Answer: Parallel venation.

Question7. If a plant has leaves with reticulate venation, the kind of roots will it have?

Answer: Tap root,

Question8. **Is it possible for you to recognize the leaves without seeing them? How?**

Answer: Yes, by taking an impression of the leaf. Put paper on the leaf. Hold the pencil tip sideways and rub it on the portion of paper having leaf below. You get impression of leaf with some lines on it. These lines help us to recognize the types of leaf.

Question9. Write the name of the parts of flower.

Answer: Parts of flower:

(i)Sepals (Calyx), (ii) Petals (Corolla), (iii)Stigma, (iv)Style, (v)Anther, (vi) Stamens

(Androecium), (vii)Pistil (Gynoecium)

Date:_____

Question10. Which of the following plants have you seen? Of those that you have seen, which one have flowers?

Grass, Maize, Wheat, Chili, Tomato, Tusli, Pipal, Shisham, Banana, Mango, Jamun, Guava, Pomegranate, Papaya, Banana, Lemon, sugarcane, Potato, Groundnut.

Answer: I have seen all these plants. Plants with flower are

Maize, Chili, Tomato, Tulsi, Shishma, Mango, Lemon, Jamun, Guava, Pomegranate, Papaya, Banana, and Lemon.

Question11. Name the part of the plant which produces its food. Name this process.

Answer: Leaves of green plants produce food. The process is called photosynthesis.

Question12. In which part of flower you likely to find the ovary?

Answer: It is the lowermost and swollen part of the pistil.

Question13. Name two flowers, each with joined and separated sepals.

Answer: Joined sepals- Rose, Lotus

Separate sepals- China rose, mustard flower.

CHAPTER – 8
Body Movements

KEYPOINTS:

The human skeleton is made of:

- **Bones: -** Bone is the unique combination of flexibility and stiffness.

Date:_____

- **Cartilages: -** It is a flexible bone which gives support to body parts like ears and nose. It also connects bones together.
- **Ligaments: -** Ligaments may be in the form of cords or sheets.

Skull: It protects the brain. It is a rigid box made up of plates of bone firmly joined together

Rib cage: It is a flexible case of ribs. Each rib curves round the side of the chest from the backbone and is joined in front to a plate of bone called sternum. Ribs are connected to one another by the muscles. Two lowermost pairs of ribs are called 'floating ribs'.

VERY SHORT ANSWER QUESTIONS

Q-1: Define **Joints:** The point where two bones meet. Allow movement to take place. Bones are held together by ligaments.

Q-2: Define Immovable or Fixed Joints: The bones cannot move at these joints. Example: bones in skull, joint between upper jaw and rest of skull.

Q-3. Name the type of joint of your hand which help you to grasp a badminton racquet.

Ans. Hinge joint allow movement in one plane only , that is up and down or backward and forward , due to this you are able to hold racquet properly.

Q-4. What would have happened if our backbone was made of one single bone?

Ans. If our backbone would have been made of a single bone we would not have been able to bend our waist forward or backward.

SHORT ANSWER QUESTIONS

1.Name all type of movable joints.

Date:_____

Ans: Type of movable joints are:

(i) **Hinge Joints:**. Example: elbow joints, knee joints and the joint between phalanges of fingers and toes.

(ii) **Ball and Socket Joints:**Example: the shoulder.

(iii) **Gliding Joints:** Example: bones inside wrists and feet.

(iv) **Pivotal Joints:** . It allows the head to move backwards and forward and turn to the right and left.

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2. Boojho fell off a tree and hurt his ankle. On examination the doctor confirmed that the ankle was fractured. How was it detected?

Ans. The doctor on observing a swelling at the ankle must have prescribed an X-ray of the ankle. After examining the x-ray photograph doctor confirms the internal injuries or fractures in the ankle.

3**. Bones are hard structures and cannot be bent. But, we can still bend our elbow, knee, etc. How is this possible?**

Ans. The elbow and knees does not have a single bone. Instead they are made of two or more bones joined together. This is known as hinge joint that allows only a back and forth movement. The knee has ball and socket joint which allows movement in all directions.

4. Earthworms are known as 'farmer's friends'. Why?

Ans. An earthworm eats the materials available in soil to burrow themselves , leaving behind the casts and canals making the soil airy, soft and fertile good for plant growth.

LONG ANSWER QUESTIONS

1. How is the skeleton of a bird well-suited for flying?

Date:_____

Ans. The skeleton of a bird is well suited for flying because (i) the skeleton in a bird is strong but the bones are light in weight and hollow inside. (ii) The fore-limbs in a bird are modified into wings . Wings are suported with strong muscles. (iii) The hind-limbs or the legs are with a claw which is moified to hold the support for perching.(iv) The body is light in weight and steamlined- narrow in front and at the back ,broad in the middle which reducess resistance from air.

Birds fly by flapping their wings. when a bird is in flight it kees its hind-limbs close to its body. While landing , it brings out the hind-limbs and kee the wings open and staionary. Folding of the limbs while in air reduces resistance from air.

2. In Fig. 8.2 there are two snakes of the same size slithering on sand. Can you identify which of them would move faster and why?

Fig. 8.2

Ans. A snake forms loops in its body while slithering which gives it a forward push by pressing against the ground. The snake having more number of loops will move much faster than the snake having less number of loops. Therefore, snake A will move faster than snake B.

TEXTUAL EXERCISE:

Question 1. Fill in the blanks:
(a) Joints of the bones help in the ---------- of the body.
(b) A combination of bones and cartilages forms the --------- of the body.
(c) The bones at the elbow are joined by a -------- joint.
(d) The contraction of the ---------- pulls the bones during movement.

Answer: (a) Joints of the bones help in the **movement** of the body.
(b) A combination of bones and cartilages forms the **skeleton** of the

body.
(c) The bones at the elbow are joined by **hinge** joint.
(d)The contraction of the **muscle** pulls the bones during movement.

Question 2. Indicate True (T) and False (F) among the following sentences:

(a) The movement and locomotion of all animals is exactly the same.
(b) The cartilages are harder than bones.
(c) The finger bones do not have joints.
(d) The fore arm has two bones.
(e) Cockroaches have an outer skeleton.

Answer: (a)F, (b)F, (c)F, (d)T, (e)T

Question 3. Match the items in Column I with one or more items of Column II.

Column I	Column II
Upper jaw	have fins on the body.
Fish	has an outer skeleton.
Ribs	can fly in the air.
Snail	is an immovable joint
Cockroach	protect the heart. Shows very slow movement. Have streamlined body.

Answer:

Column I	Column II
Upper jaw	Is an immovable joint.
Fish	Have fins on the body, have a streamlined body.
Ribs	Protect the heart.
Snail	Has an outer skeleton, Shows very slow movement.
Cockroach	Has an outer skeleton, Can fly in the air.

Question 4. Answer the following:

Date:_____

(a) What is a ball and socket joint?
(b) Which of the skull bones are movable?
(c) Why can our elbow not move backwards?

Answer: (a) The rounded end of bone fits into the cavity of the other bone. Such a joint allows movements in all directions.

(b) Lower jaw
(c) Elbow cannot move backwards, because it has hinge joint which allows movement in one direction.