Date:_____

पु॰ना International School

Shree Swaminarayan Gurukul, Zundal

Class –VI

SCIENCE

Year- 2020-21

Date:_____

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CHAPTER – 5
Separation of Substances

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:

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

Q-4: Define Condensation:

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:

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• Milk or curd is churned to separate the butter

• Grain is separated from stalks, while harvesting.

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.

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

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**.

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Question9. True or False?

(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.

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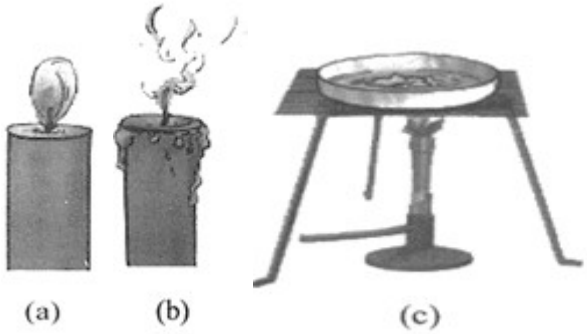
(d) Chemical changes: Changes in which substance is transformed into new substance. Initial substance is lost. Change is always irreversible. Example: burning a log of wood.

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?

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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

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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.

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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:

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(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.

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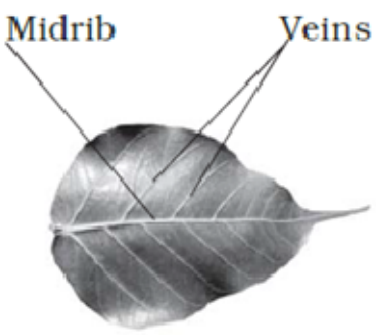
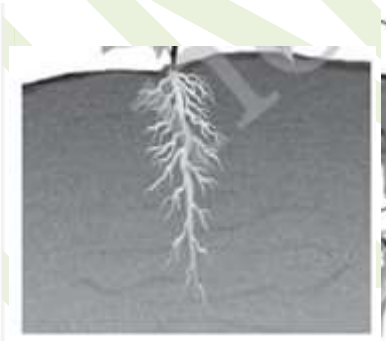
Answer: The correct statements are
(a) Roots absorb water and minerals from the soil.
(b) Stem holds the plant upright.
(c) Stem conducts water to the leaves.
(d) The number of petals and sepals in a flower is usually the same.
(e) If the sepals of flower are joined together, its petals are not necessarily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

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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.

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- **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.

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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?

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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.