

Science

TERM - III

[257]

2. A student who checked some magnets in the school laboratory found out that their magnetic force is worn out. Give three reasons for that?

Ans : Magnets lose their properties if they are

- i. heated
- ii. dropped from a height
- iii. hit with a hammer

These are the reasons for that their magnetic force is worn out.

IX. Answer in detail:

1. You are provided with an iron needle. How will you magnetize it?

Ans :

- i. Take the given iron needle.
- ii. Place it on a table.
- iii. Take a bar magnet and place one of its poles near one edge of the needle.
- iv. Rub from one end to another end without changing the direction of the pole of the magnet.
- v. Repeat the process for 30 to 40 times.
- vi. Bring a pin near the needle.
- vii. Now the needle attracts the pin. So needle is magnetized.

2. How does the electromagnetic train work?

Ans :

- i. Electromagnets are used in Electromagnetic train.
- ii. Electromagnets are magnetised only when current flows through them.
- iii. When the direction of current is changed the poles of the electromagnets are also changed.
- iv. Like poles of the magnets which are attached at the bottom of the train and rail track repel each other.
- v. So, the train is lifted from the track up to a height of 10 cm.
- vi. We know that we can move any magnetic object with the force of attraction or repulsion properties of magnets.
- vii. This train also moves with the help of the magnets attached on the sides of track and the magnets fitted at the bottom sideways of the train.
- viii. By controlling the current, we can control the magnets and movement of the train.

X. Questions based on Higher Order Thinking Skills:

1. You are provided with iron filings and a bar magnet without labelling the poles of the magnet. Using this

a. How will you identify the poles of the magnet?

Ans : Tie a piece of thread to the centre of bar magnet and suspend it. After some rotation, the magnet stops at a position. The end of the magnet that points to the north is called north pole.

The end of the magnet that points to the south is called South pole.

b. Which part of the bar magnet attracts more iron filings? Why?

Ans : The more iron filings are attracted by the poles of the magnet, because the poles have more concentrated magnetic power.

✍ Intext Activities

ACTIVITY - 1

Take a magnet. Take the magnet Closer to the objects surrounding you.
What happens? Observe and note.

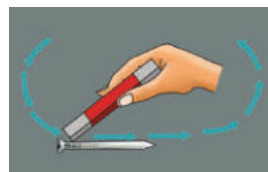
- i. The objects attracted by the magnet : _____
- ii. The objects, not attracted by the magnet : _____
- iii. Which substance is used to make the objects attracted by the magnet?

- Ans :**
- i. irons nail, iron rod, pins, needle, key, iron filings.
 - ii. rubber, paper, plastic pen, scale, pencil, water bottle.
 - iii. Iron is used to make the objects attracted by the magnet.

ACTIVITY - 2

LET US MAKE MAGNETS

Take a nail / a piece of Iron and place it on a table. Now take a bar magnet and place one of its poles near one edge of the nail / piece of Iron and rub from one end to another end without changing the direction of the pole of the magnet. Repeat the process for 30 to 40 times.



Bring a pin or some iron filings near the nail / piece of Iron to check whether it has become a magnet. Does the nail/piece of iron attract the pin / iron filings? If not, continue the same process for some more time.

- Ans :** Yes, The nail / a piece of Iron acquires the same ability to attract other pieces of pin/ iron filings.

ACTIVITY - 3

Make your own magnetic compass

Insert the magnetized needle, that you made in the activity 2, in to two styrofoam balls and place the needle in bowl of water. Test whether the floating needle is always turned in rest on north-south direction. **Note :** If you don't have styrofoam balls you can use dry leaf or a cork piece.



Inference: The floating needle is always turned in rest on North-South direction.



4. We could see clouds almost every day. Why doesn't it rain daily?

Ans : The rain came whenever the clouds will condense. If it will not occur, the rain will not come. So the process of condensation is essential so it does not rain daily.

5. Name the places where water is found as ice.

Ans : Ice is present in top of tall mountains, glaciers and polar regions.

6. How do aquatic animals manage to live in Arctic and Antarctic Circle?

Ans : In Arctic and Antarctic circle, water in lakes and ponds will be frozen and a solid layer of ice is formed on the surface of water. Still aquatic animals living under the ice do not die. This is because the floating layer of ice acts as a protective coat and does not permit heat to escape from water. So the surface water alone turns to ice. So the aquatic animals manage it.

7. What are the types of rain water harvesting?

Ans : Two types of rain water harvesting are

- a) Collecting water from where it falls.

Example : Collecting water from the roof tops of the houses or buildings (Roof water harvesting).

- b) Collecting flowing rain water.

Example : Collecting rainwater by constructing ponds with bund.

VIII. Give short answer:**1. Differentiate between surface water and ground water.**

Ans :

Sl.No.	Surface water	Ground water
1.	Water present on the surface of the earth.	Water present beneath Earth's surface in soil.
2.	Ex : River, lake, ponds, streams or freshwater.	Ex : open wells, tube wells (or) hand pumps, Spings etc.,

2. Write a few slogans of your own on the topic "Save Water".

Ans : Save water slogans :

1. Conserve water, conserve life.
2. Save water, and it will save you.
3. It takes a lot of blue to stay green.
4. Don't let life slip down the drain.
5. Don't flush our planet's most valuable source.

3. About 71% of earth's surface is covered with water, then why do we face scarcity of water?

Ans : These 71% of water is salty water. It is present in seas and oceans. The fresh water is in the form of glacier and ice bergs. So we face scarcity of water.

4. Water from oceans, lakes, ponds and rivers evaporates due to the heat of _____.
 (a) Sun (b) Pressure (c) Atmosphere (d) None of these [Ans : (a) Sun]
5. In plants, the loss of water in the form of vapour from the aerial parts through _____.
 (a) Root (b) Shoot (c) Stomatal Pores (d) Fruit [Ans : (c) Stomatal Pores]
6. _____ water is obtained through open wells, tube wells or hand pumps, springs.
 (a) Surface (b) Frozen (c) Saline (d) Ground [Ans : (d) Ground]
7. _____ of Asia's largest rivers flow from the Himalayas.
 (a) 10 (b) 9 (c) 11 (d) 15 [Ans : (a) 10]
8. Volume of liquid is measured by _____.
 (a) Gallon (b) Litre (c) Cusec (d) All the above [Ans : (d) All the above]
9. _____ forests are found in Pichavaram near Chidambaram.
 (a) Green (b) Grass lands (c) Mangrove (d) Estuaries [Ans : (c) Mangrove]

II. Fill up the blanks:

1. _____ plays a vital role in the evolution and survival of life. [Ans : Water]
2. _____ is present in the air around us. [Ans : Vapour]
3. In the distribution of total 0.3% of surface water, _____ have 87% surface water. [Ans : Lakes]
4. The molecular formula of water is _____. [Ans : H₂O]
5. The oceanic volcanoes which are present inside also add _____ to the sea. [Ans : Salt]
6. Every year _____ is observed as the world water day. [Ans : March 22nd]
7. The water vapour gets cooled and changes into tiny water droplets that form _____ in the sky. [Ans : Clouds]
8. A larger portion of water is _____ % of the total available fresh water in frozen state. [Ans : 68.7]
9. Water level in the reservoirs is measured in _____. [Ans : Cubic feet per second (cusecs)]
10. Adoption of _____ and _____ irrigation in agriculture. [Ans : Drip, Sprinkler]

III. True or False. If False, give the correct statement:

1. Mountains helps to regulate the temperature of our earth.

Ans : False. **Water** helps to regulate the temperature of our earth.

ACTIVITY - 4

Spread a piece of wet cloth in the sunlight. Observe after some time. Where has the water in the wet cloth gone?



The water evaporates into the atmosphere due to the heat of the sun.

ACTIVITY - 5**Condensation of water vapour**

Take a glass half filled with water. Wipe the outer surface of the glass with a clean piece of cloth. Add some ice into the water. Wait for one or two minutes. Observe the changes that take place on the outer surface of the glass.

From where do water drops appear on the outer side of the glass?

The cold surface of the glass containing icy water cools the air around it and the water vapour of the air condenses on the surface of the glass. This process is also the result of condensation of water vapour.

ACTIVITY - 6**Estimation of water consumed by a family on a day**

Ans :

Activity	Amount of water used (in litres)
Brushing	01
Bathing	60
Washing clothes	40
Toilets	40
Cooking	04
Washing utensils	20
Cleaning floor	15
Any other purpose	15
Total amount of water used by a family in a day	195

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- vi. Then add garden waste on the layer of sand.
- vii. Then spray with water.
- viii. All layers must be moistened with water.
- ix. After 10 to 15 days, we get vermicompost manure.

Benefits:

- i. It is rich in all essential nutrients.
- ii. It improves soil structure, texture and prevent soil corrosion.
- iii. It contains valuable hormones like auxons, gibberellin etc.
- iv. It neutralizes the soil protection.

XI. Project :

1. Take 100 ml of hot water in a glass jar.
2. Add 50 gram of maida powder in the hot water and stir it well.
3. A paste like substances are formed. Add a small quantity of copper sulphate for a long use.
4. Now you test this paste by binding your damaged book.

Ans : Activity to be done by the students themselves 

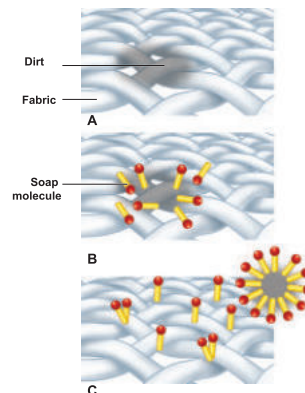
Additional Questions
I. Choose the appropriate answer:

1. _____ change results in the change of the substance.
 (a) Physical (b) Chemical
 (c) Biological (d) Zoological [Ans : (b) Chemical]
2. _____ are the substances which can undergo chemical changes to produce certain materials.
 (a) Soaps (b) Fertilizers
 (c) Plastics (d) All the above [Ans : (d) All the above]
3. _____ is the important material in construction industry.
 (a) Soap (b) Adhesives
 (c) Cement (d) Fertilizers [Ans : (c) Cement]
4. All the plants get their _____ from the soil.
 (a) Nutrients (b) Water
 (c) Nitrogen (d) All the above [Ans : (a) Nutrients]
5. _____ concrete is a composite material by mixing iron mesh with cement.
 (a) Mortar (b) m-sand
 (c) Reinforced cement (d) Gypsum [Ans : (c) Reinforced cement]

VII. Answer in detail :

1. How soaps clean clothes?

- Ans :** (i) We are using wash powder to remove strong stains on the clothes.
 (ii) The detergent molecules have two sides, one side “water loving”, other “water hating”.
 (iii) Water hating goes and joins with dirt and oil in the cloth while the water loving joins with the water molecules.
 (iv) When you agitate the cloth the dirt is surrounded by many molecules and is taken away from the cloth.
 (v) The cloth becomes clean, and the dirt surrounded by the detergent molecules float in the water making it dirty.



Intext Activities

ACTIVITY - 1

Discuss with your group and list out few chemicals which we use in our home and school.

- Ans :** We are using the following Chemicals in our home and school :-
 Detergents, Air freshners, Disinfectant, Glass cleaning chemicals, Detergents, Shampoo, Lubricants, Metal polishers, Rest room cleaning chemicals, Naphthalene, Bathing soap, Hit.

ACTIVITY - 3

Collect various kinds of soap's wrapper. Complete the following table based on the information provided in the wrapper.

S.No	Name of the Soap	Ingredients
1.	Bathing soap	
2.	Washing soap	
3.	Bathing soap for kids	
4.	Toilet cleaners	
5.	House floor cleaner liquid	

Inference : Nature of the soaps varies according to its constituents.

2. Write a short note on noise pollution.

- Ans :** (i) Noise pollution affects the environment. We all like a quiet and peaceful place, since unpleasant or loud sounds disturb us.
- (ii) Loud music, the sounds of motor vehicles, fire works and machines cause noise pollution. Continuous noise disturbs our sleep and does not let us to study.
- (iii) Noise pollution has been directly linked to stress and health impacts such as high blood pressure and hearing loss.
- (iv) Loud noise or even loud music can damage our ears. Noise pollution also disturb animals.
- (v) Birds have to communicate (talk) louder so that, they can hear each other in noisy areas.
- (vi) Even underwater noise pollution from ships, can make whales lose their way as they use sounds to navigate.

Reduce noise pollution :

- Turn off your electronics when you do not use them.
- Avoid fire works.
- Speak, do not shout.
- Remind drivers not to use the horn too much.
- Lower the volume when you watch TV (or) listen to music.

IX. Questions based on Higher Order Thinking Skills :

1. What would happen if an organism is removed from the food chain?

- Ans :** If an organism is removed from the food chain, the food chain is incomplete. So animals fight with each other for food and imbalanced in nature. So it increases the disease in nature.

2. Explain the link between waste and dangerous diseases like dengue and malaria?

- Ans :** (i) Dengue and malaria fever are caused by the bite of mosquitoes.
- (ii) Accumulation of waste and stagnant water or uncovered containers of stored drinking water are the habitat for breeding mosquitoes.
- (iii) In order to control these infectious diseases, people should maintain clean environment, free from mosquitoes.

X. See the diagram and answer the following questions :



7. The process by which waste materials are used to make new products is called recycling.

Ans : True.

8. Expired medicines, used batteries are domestic hazardous waste.

Ans : True.

9. Loud noise or even loud music can damage our eyes.

Ans : False. Loud noise or even loud music can damage our **ears**.

IV. Match the following :

A.

I.	Abiotic factor	a)	Deer
II.	Decomposers	b)	Owl
III.	Herbivores	c)	Heat
IV.	Carnivores	d)	Human
V.	Omnivores	e)	Fungi

Ans : I - c, II - e, III - a, IV - b, V - d.

B.

I.	Avoid the usage	a)	Recycle
II.	Sharing newspapers	b)	Incinerate
III.	Using of fountain pens	c)	Buying packaged food
IV.	Using old clothes to make paper	d)	Reducing
V.	Human anatomical waste	e)	Reusing

Ans : I - c, II - d, III - e, IV - a, V - b.

C.

I.	Burning coal	a)	Land pollution
II.	Throwing plastic	b)	Noise pollution
III.	Waste water from factories is mixed with river	c)	Air pollution
IV.	Louder horn of vehicle	d)	Water pollution

Ans : I - c, II - a, III - d, IV - b.

V. Analogy:

1. **Biotic factor : Animals :: Abiotic factor : _____**

Ans : Air or Water.

2. **Natural terrestrial ecosystem : Forest :: Artificial terrestrial ecosystem : _____**

Ans : Garden.

3. **Primary Consumer : Goat, Cow :: Secondary Consumer : _____**

Ans : Frog, Owl.

4. **Biodegradable waste : Leaves, Garden wastes :: Non-biodegradable waste : _____**

Ans : Plastic cover, glass bottle.

5. **Edaphic factor : Water in soil :: Physical factor : _____**

Ans : Light.

2. How can we reduce air pollution?

- Ans :**
1. Cycle or walk short distances instead of using a motor vehicle.
 2. Travel by public transport (bus or train)
 3. Do not burn solid waste.
 4. Avoid fireworks.

3. Classify the most significant sources of water pollutants.

- Ans :** The most significant sources of water pollutants are
1. Sewage (water we use at home for bathing, cleaning, cooking).
 2. Industrial effluents (liquid wastes from factories).
 3. Agricultural pollutants (chemical pesticides and fertilisers that get washed from farms).
 4. Solid waste (when waste gets dumped into water bodies).

4. How do we reduce noise pollution?

- Ans :**
1. Turn off your electronics when you do not use them.
 2. Lower the volume when you watch TV or listen to music.
 3. Remind drivers not to use the horn too much.
 4. Avoid fireworks.
 5. Speak, do not shout (try to set an example).

📖 Intext Activities

ACTIVITY - 1

Think of the objects in your home. Just keep in mind, the books, toys, furniture, food materials and even pets of your home. These living and non-living things together make your home. Look at the following picture and list out the living and non-living things.



Ans : Living things : Plants, Beetle, Mosquito, Larva, Water snake, Water scorpion, Snail, Fish, Duck and Frog etc.,

Non- living things : Sun, Air, Water, Chemicals, Soil, Rocks and Temperature etc.

III. True or False — If False give the correct answer :

1. Plants grown for decorative purposes are called as softwood.

Ans : False. Plants grown for decorative purposes are called **Ornamental plants**.

2. Silkworm eats mulberry leaves.

Ans : True.

3. Cauliflower is used for ornamental purpose.

Ans : False. **Jasmine** is used for ornamental purpose.

4. Cotton cloth is not suitable for summer season.

Ans : False. Cotton cloth is **suitable** for summer season.

5. Sugarcane is used as bio fuel.

Ans : True.

IV. Match the following :

1. Fibre yielding plant	Chloramine
2. Hardwood	Spice
3. Neem	Hemp
4. Clove	Cereals
5. Millet	Teakwood

Ans :

1. Fibre yielding plant	Hemp
2. Hardwood	Teak wood
3. Neem	Chloramine
4. Clove	Spice
5. Millet	Cereals

V. Analogy :

1. mango : fruit :: maize : _____

Ans : Cereals.

2. coconut : fibre :: rose : _____

Ans : Ornamental.

3. bees: Pollinate insect :: earthworms : _____

Ans : Natural manure

VI. Give very short answer:

1. What is food?

Ans : Any nutritious substance that people or animals eat or drink or that plants absorb in order to maintain life and growth is called Food.

V. Match the following :**A.**

I.	Plants as food	a)	Curry leaves
II.	Spice yielding plant	b)	Phylanthus
III.	Medicinal plant	c)	Paddy
IV.	Fibre yeilding plant	d)	Carnation
V.	Ornamental plant	e)	Coconut

Ans : I - c, II - a, III - b, IV - e, V - d.**B.**

I.	Root as food	a)	Yarn
II.	Leaves as food	b)	Banana flower
III.	Stems as food	c)	Apple
IV.	Flowers as food	d)	Beetroot
V.	Fruits as food	e)	Cabbage

Ans : I - d, II - e, III - a, IV - b, V - c.**VI. Give short answer :****1. Define - Economic botany.****Ans :** Economic botany is the study of relationship between people and plants and the uses of plants in economy.**2. Classify plants on the basis of economic values and uses.****Ans :** They are classified into six varieties. They are

- | | |
|----------------------------|----------------------------|
| i. Plants as food. | ii. Spice yielding plants. |
| iii. Medicinal plants. | iv. Fibre yielding plants. |
| v. Timber yielding plants. | vi. Ornamental plants. |

3. Define - Cereals.**Ans :** Cereals are edible components of grain of cultivated grass.

Example : Rice, Wheat, Bajra, Millet.

4. Name some of the Indian spices.**Ans :** Cardamom, black pepper, curry leaves, fenugreek, fennel, ajwain, bay leaves, cumin, coriander seeds, turmeric, cloves, ginger, nutmeg and cinnamon.**5. Name some medicinal plants.****Ans :** The medicinal plants are Phylanthus, Vallarai, Black nightshade, Tippili, Vettiver, Thuthuvalai, Neem and Tulsi.**6. Classify the Fibre yielding plants based on use.**

- Ans :**
- | | |
|---------------------|------------------|
| i. Textile Fibres | - Cotton. |
| ii. Cordage Fibres | - Coconut Fibre. |
| iii. Filling Fibres | - Silk cotton. |

7. Classify the Fibre yielding parts based on the plant parts.

- Ans :**
- | | |
|------------------------------------|---------------|
| i. Plant Fibres include seed hairs | - Cotton. |
| ii. Stem Fibres | - Flax, jute. |
| iii. Leaf Fibres | - Agave. |
| iv. Husk Fibres | - Coconut. |

5. _____ is one of the example of application program.
 (a) Drawing tools (b) Language
 (c) Linker (d) Device driver [Ans : (a) Drawing tools]
6. The license of the software would not be provided unless it is _____.
 (a) Collected (b) Purchased
 (c) dismantled (d) sold [Ans : (b) Purchased]

II. Fill up the blanks:

1. _____ is lifeless without software in a computer. [Ans : Hardware]
2. _____ are programmed and coded applications to process the input information. [Ans : Software]
3. Software is divided into _____ types based on the process. [Ans : two]
4. _____ is a developing software to control the internal computer operation. [Ans : Linker]
5. _____ software is available at free of cost and can be shared to many end users. [Ans : Free and Open]
6. _____ is the Paid and Proprietary Software. [Ans : Adobe Photoshop]

III. Give short answer :

1. What are the types of software?

Ans : The Software is divided into two types based on the process. They are

- i. System Software (Operating System).
- ii. Application software.

2. Give some examples of System Softwares.

Ans : Some of the Popular Operating system are LINUX, Windows, Mac, Android etc.

3. Give some examples of Application Software.

Ans : The following are the examples of application program : Video player, Audio player, Word processing software, Drawing tools, Editing software, etc.

4. Define - Application Software.

Ans : i. Application software is a program (or) a group of programs designed for the benefit of end user to work on computer.
 ii. The application programs can be installed in the hard disk for the usage on a particular computer.

5. What is the classification of System Software?

Ans : System software is divided into two types :

- i. System Management Program.
- ii. Developing Software.