

1

Nutrition in Plants

MULTIPLE CHOICE QUESTIONS

1. Organisms which prepare food for themselves using simple naturally available raw materials are referred to as
 - (a) heterotrophs
 - (b) autotrophs
 - (c) parasites
 - (d) saprophytes
2. In the absence of which of the following will photosynthesis not occur in leaves?
 - (a) Guard cells
 - (b) Chlorophyll
 - (c) Vacuole
 - (d) Space between cells
3. Which of the following statements is/are correct?
 - (i) All green plants can prepare their own food.
 - (ii) Most animals are autotrophs.
 - (iii) Carbon dioxide is not required for photosynthesis.
 - (iv) Oxygen is liberated during photosynthesis.

Choose the correct answer from the options below:

- | | |
|--------------------|------------------|
| (a) (i) and (iv) | (b) (ii) only |
| (c) (ii) and (iii) | (d) (i) and (ii) |
4. Pitcher plant traps insects because it
 - (a) is a heterotroph.
 - (b) grows in soils which lack in nitrogen.
 - (c) does not have chlorophyll.
 - (d) has a digestive system like human beings.
 5. The term that is used for the mode of nutrition in yeast, mushroom and bread-mould is
 - (a) autotrophic
 - (b) insectivorous
 - (c) saprophytic
 - (d) parasitic

6. When we observe the lower surface of a leaf through a magnifying lens we see numerous small openings. Which of the following is the term given to such openings?
- (a) Stomata
 - (b) Lamina
 - (c) Midrib
 - (d) Veins
7. Two organisms are good friends and live together. One provides shelter, water, and nutrients while the other prepares and provides food. Such an association of organisms is termed as
- (a) saprophyte
 - (b) parasite
 - (c) autotroph
 - (d) symbiosis
8. Which of the following raw material is available in the air for photosynthesis?
- (a) Oxygen
 - (b) Carbon dioxide
 - (c) Nitrogen
 - (d) Hydrogen

VERY SHORT ANSWER QUESTIONS

9. Potato and ginger are both underground parts that store food. Where is the food prepared in these plants?
10. Photosynthesis requires chlorophyll, and a few other raw materials. Add the missing raw materials to the list given below: Water, minerals, _____, _____.
(a) (b)

SHORT ANSWER QUESTIONS

11. A goat eats away all the leaves of a small plant (balsam). However, in a few days, new leaves could be seen sprouting in the plant again. How did the plant survive without leaves?

12. Unscramble the following to form terms related to modes of nutrition.
- (i) RASPAEIT
 - (ii) ROPEHYTSAP
 - (iii) TOROPHAUT
 - (iv) SIBIOMSYS
13. Nitrogen is an essential nutrient for plant growth. But farmers who cultivate pulse crops like green gram, bengal gram, black gram, etc. do not apply nitrogenous fertilizers during cultivation. Why?
14. Wheat dough if left in the open, after a few days, starts to emit a foul smell and becomes unfit for use. Give reason.
15. Sunlight, chlorophyll, carbon dioxide, water and minerals are raw materials essential for photosynthesis. Do you know where they are available? Fill in the blanks with the appropriate raw materials.
- (a) Available in the plant : _____
 - (b) Available in the soil : _____, _____
 - (c) Available in the air : _____
 - (d) Available during day : _____
16. Observe the diagram given as Figure 1.1 and label the following terms given in the box.

stomatal opening, guard cell

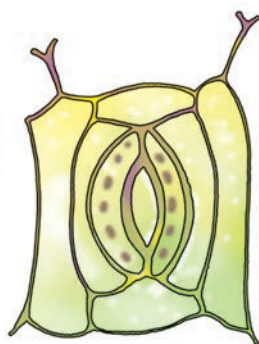


Fig. 1.1

LONG ANSWER QUESTIONS

17. Match the organisms given in **Column I** with their mode of nutrition given in **Column II**.

| Column I | Column II |
|-------------------|-------------------------|
| (a) Mango tree | (i) Insectivorous plant |
| (b) Mushroom | (ii) Heterotroph |
| (c) Pitcher plant | (iii) Autotroph |
| (d) Cuscuta | (iv) Saprophyte |
| (e) Elephant | (v) Parasitic |

18. Wild animals like tiger, wolf, lion and leopard do not eat plants. Does this mean that they can survive without plants? Can you provide a suitable explanation?
19. Fill in the blanks of the paragraph given below with the words provided in the box.

chlorophyll, energy, food, carbon dioxide, water, photosynthesis

Note: A word can be used more than once.

Leaves have a green pigment called _____ (a) _____ which captures _____ (b) _____ from sunlight. This _____ (c) _____ is used in the process of _____ (d) _____ and along with other raw materials like _____ (e) _____ and _____ (f) _____ synthesize _____ (g) _____.

20. Spot as many organisms as possible in the puzzle given as Figure 1.2 by encircling them as shown. Write the names on a sheet of paper and categorise them into autotrophs and heterotrophs. Classify the heterotrophs into herbivores, carnivores, omnivores and saprophytes.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| B | R | O | S | E | A | T | C | R | O | W |
| A | A | G | N | B | H | I | N | D | I | B |
| N | B | N | G | I | N | G | E | R | C | L |
| Y | B | A | N | H | B | E | C | O | W | F |
| A | I | M | U | S | H | R | O | O | M | F |
| N | T | G | B | E | R | M | W | F | I | O |
| E | L | E | P | H | A | N | T | S | C | X |
| T | S | A | E | Y | N | P | H | B | E | E |
| C | A | R | R | O | T | U | L | S | I | X |

Fig. 1.2

21. Can you give me a name?
Solve each of the following riddles by writing the name of the organism and its mode of nutrition. One riddle is solved to help you.
- I am tall but I cannot move. I am green and can prepare my own food. tree, autotroph
 - I live in water; people keep me in an aquarium and feed me. _____, _____
 - I am small and I can fly. I disturb your sleep, bite you and suck your blood which is my food. _____, _____
 - I am white and soft. I grow well in the rainy season. Children pluck me from the ground and admire me. I absorb nutrients from decomposed dead parts of plants and animals in the soil. _____, _____.

2

Nutrition in Animals

MULTIPLE CHOICE QUESTIONS

1. Given below from (i) to (iv) are some food items.

- (i) Boiled and mashed potato
- (ii) Glucose solution
- (iii) A slice of bread
- (iv) Mustard oil

Which of the above will give blue-black colour when tested with iodine?

- (a) (i) and (ii)
- (b) (i) and (iii)
- (c) (ii) and (iii)
- (d) (iii) and (iv)

2. Which of the following pair of teeth differ in structure but are similar in function?

- (a) canines and incisors.
- (b) molars and premolars.
- (c) incisors and molars.
- (d) premolars and canines.

3. Read carefully the terms given below. Which of the following set is the correct combination of organs that do not carry out any digestive functions?

- (a) Oesophagus, Large Intestine, Rectum
- (b) Buccal cavity, Oesophagus, Rectum
- (c) Buccal cavity, Oesophagus, Large Intestine
- (d) Small Intestine, Large Intestine, Rectum

4. The swallowed food moves downwards in the alimentary canal because of

- (a) force provided by the muscular tongue.
- (b) the flow of water taken with the food.
- (c) gravitational pull.
- (d) the contraction of muscles in the wall of food pipe.

5. The acid present in the stomach
- (a) kills the harmful bacteria that may enter along with the food.
 - (b) protects the stomach lining from harmful substances.
 - (c) digests starch into simpler sugars.
 - (d) makes the medium alkaline.
6. The finger-like outgrowths of *Amoeba* helps to ingest food. However, the finger-like outgrowths of human intestine helps to
- (a) digest the fatty food substances.
 - (b) make the food soluble.
 - (c) absorb the digested food.
 - (d) absorb the undigested food.
7. Read the following statements with reference to the villi of small intestine.
- (i) They have very thin walls.
 - (ii) They have a network of thin and small blood vessels close to the surface.
 - (iii) They have small pores through which food can easily pass.
 - (iv) They are finger-like projections.
- Identify those statements which enable the villi to absorb digested food.
- (a) (i), (ii) and (iv)
 - (b) (ii), (iii) and (iv)
 - (c) (iii) and (iv)
 - (d) (i) and (iv)
8. The false feet of *Amoeba* are used for
- (a) movement only.
 - (b) capture of food only.
 - (c) capture of food and movement.
 - (d) exchange of gases only.
9. The enzymes present in the saliva convert
- (a) fats into fatty acids and glycerol.
 - (b) starch into simple sugars.
 - (c) proteins into amino acids.
 - (d) complex sugars into simple sugars.

10. Cud is the name given to the food of ruminants which is
- (a) swallowed and undigested.
 - (b) swallowed and partially digested.
 - (c) properly chewed and partially digested.
 - (d) properly chewed and completely digested.
11. Choose the correct order of terms that describes the process of nutrition in ruminants.
- (a) swallowing → partial digestion → chewing of cud → complete digestion
 - (b) chewing of cud → swallowing → partial digestion → complete digestion
 - (c) chewing of cud → swallowing → mixing with digestive juices → digestion
 - (d) swallowing → chewing and mixing → partial digestion → complete digestion
12. Cellulose-rich food substances are good source of roughage in human beings because
- (a) human beings do not have cellulose-digesting enzymes.
 - (b) cellulose gets absorbed in the human blood and converts into fibres.
 - (c) the cellulose-digesting bacteria convert cellulose into fibres.
 - (d) cellulose breaks down into smaller components which are egested as roughage.

VERY SHORT ANSWER QUESTIONS

13. Name the parts of the alimentary canal where
- (i) water gets absorbed from undigested food.
 - (ii) digested food gets absorbed.
 - (iii) taste of the food is perceived.
 - (iv) bile juice is produced.
14. Mark the following statements as True or False. If false, write the correct statements.
- (a) Tongue is attached to the roof of the mouth cavity at the back.

- (b) The large intestine is longer and wider than the small intestine of the human alimentary canal.
 - (c) Mucus protects the stomach lining from damage.
 - (d) All heterotrophs have a similar basic process of nutrition.
15. Choose the odd one out from each group and give reasons.
- (i) liver, salivary gland, starch, gall bladder
 - (ii) stomach, liver, pancreas, salivary gland
 - (iii) tongue, absorption, taste, swallow
 - (iv) oesophagus, small intestine, large intestine, rectum
16. You were blindfolded and asked to identify the drinks provided in two different glasses. You could identify drink A as lime juice and B as bitter gourd juice. How could you do it inspite of being blindfolded?
17. Fill in the blanks with suitable words:
- (a) The alimentary canal stretches from _____ to _____.
 - (b) Teeth are rooted in separate _____ in between the _____.
 - (c) Digestion of food starts in _____ and gets completed in _____.
 - (d) _____ is the largest gland in the human body.
18. Following statements describe the five steps in animal nutrition. Read each statement and give one word for each statement. Write the terms that describes each process.
- (a) Transportation of absorbed food to different parts of body and their utilisation.
 - (b) Breaking of complex food substances into simpler and soluble substances.
 - (c) Removal of undigested and unabsorbed solid residues of food from the body.
 - (d) Taking food into the body.
 - (e) Transport of digested and soluble food from the intestine to blood vessels.

SHORT ANSWER QUESTIONS

19. Match the animals in **Column I** with their mode of feeding listed in **Column II**

| Column I | Column II |
|----------------|------------------------|
| <i>Animals</i> | <i>Mode of Feeding</i> |
| (a) House fly | (i) Biting and chewing |
| (b) Cockroach | (ii) Suckling |
| (c) Mosquito | (iii) Sponging |
| (d) Infants | (iv) Sucking |

20. Boojho took some grains of boiled rice in test tube 'A' and Paheli took boiled and chewed rice in test tube 'B'. Both of them poured 1 – 2 drops of iodine solution into the test tube and observed the colour change. What colour change would they have observed? Give reasons for your answer.
21. 'A' got her gall bladder removed surgically as she was diagnosed with stones in her gall bladder. After the surgery, she faced problems in digestion of certain food items when consumed in bulk. Can you tell which kind of food items would they be and why?
22. Match the organs in **Column I** with the words listed in **Column II**.

| Column I | Column II |
|---------------------|------------------|
| (a) Rectum | (i) Mucous |
| (b) Gall bladder | (ii) Villi |
| (c) Stomach | (iii) Taste buds |
| (d) Tongue | (iv) Faeces |
| (e) Small intestine | (v) Bile juice |

23. Ruminants such as cows and buffaloes swallow their food hurriedly and then sit restfully and chew their food. Can you reason why?
24. Boojho and Paheli were eating their food hurriedly so that they could go out and play during the recess. Suddenly, Boojho started coughing violently. Think of the reasons why he was coughing and discuss with your friends.

LONG ANSWER QUESTIONS

25. Fill in the blanks using the words listed below.

water, front, intestinal, salts, pseudopodia, back, vacuole

- (a) The digestion of all food components is completed by the _____ juice.
 - (b) Large intestine absorbs _____ and some _____ from the undigested food.
 - (c) Tongue is attached at the _____ to the floor of the mouth cavity and is free at the _____.
 - (d) Amoeba pushes out _____ around the food and traps it in a food _____.
26. Label the below given Figure 2.1 as directed below in (i) to (iv) and give the name of each type of teeth.



Fig. 2.1

- (i) The cutting and biting teeth as 'A'
- (ii) The piercing and tearing teeth as 'B'
- (iii) The grinding and chewing teeth as 'C'
- (iv) The grinding teeth present only in adult as 'D'

27. Read the following passage carefully and answer the questions that follows it.

Bile juice is stored in a sac called, gall bladder, located near its organ of secretion, liver. The gall bladder releases the bile juice into the small intestine whenever food reaches there. Though bile juice is devoid of any digestive enzymes, it is required for the digestion of fats. The fats cannot be digested easily because they are insoluble in water and are present as large globules. Bile juice breaks down big fat droplets into smaller droplets. These are then easily digested by the enzymes released from the pancreas.

- (a) Which organ secretes the bile juice?
- (b) Why is digestion of fats difficult as compared to that of other nutrients?
- (c) How does bile juice help in digestion of fat?
- (d) Where is the digestion of fat completed?
- (e) Does bile juice digest fat completely?

28.

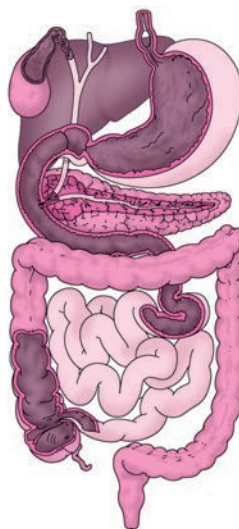


Fig. 2.2

Label the following parts in Figure 2.2 and name them.

- (a) The largest gland in our body.
- (b) The organ where protein digestion starts.
- (c) The organ that releases digestive juice into the small intestine.
- (d) The organ where bile juice gets stored.

29. Open your mouth, look into a mirror and try to count the different types of teeth in your mouth. Compare them with Figure 2.3 on page 13 of your NCERT textbook. Record your observations in the table below:

| Type of Teeth | Number of Teeth | |
|---------------|-----------------|---------------|
| | In my mouth | In the figure |
| Incisors | | |
| Canines | | |
| Premolar | | |
| Molar | | |

- (a) Did you observe any difference in the number of teeth? If yes, could you identify which type of teeth showed the difference?
- (b) Compare the number and type of teeth in an adult (say your parents or cousins who have reached the age of 25–30 or more). Note your observation.
30. Solve the crossword given as Figure 2.3.

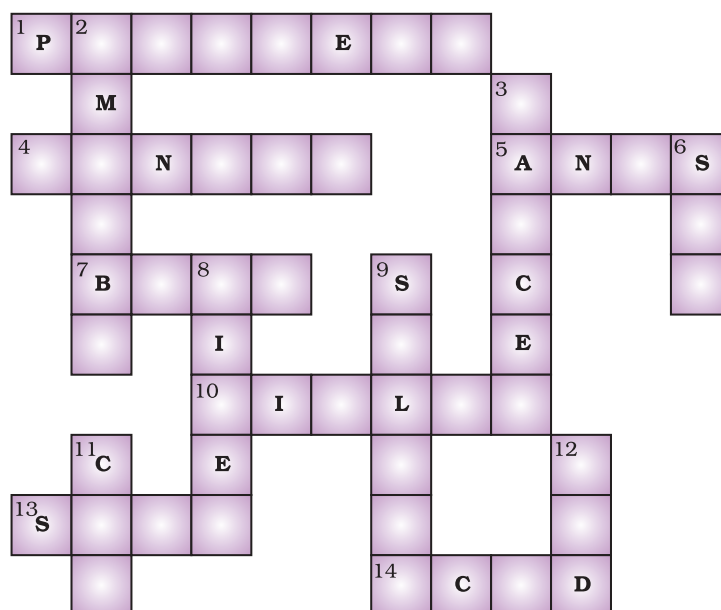


Fig. 2.3

Across

1. Cream-coloured digestive gland
3. Undigested excretory solid residues
4. Organ that mixes saliva with the food
5. Point of defecation
7. Stored in gall bladder
10. Finger-like outgrowth in the small intestine
13. Kind of taste buds
14. Kills bacteria in the stomach

Down

2. Feeds with the help of pseudopodia
6. Total number of molars in one jaw of an adult
8. Largest gland
9. Watery secretion in the mouth
11. A ruminant
12. Form of food chewed by ruminants

3

Fibre to Fabric

MULTIPLE CHOICE QUESTIONS

1. The rearing of silkworms for obtaining silk is called
 - (a) cocoon
 - (b) silk
 - (c) sericulture
 - (d) silviculture
2. Which of the following is not a type of silk?
 - (a) Mulberry silk
 - (b) Tassar silk
 - (c) Mooga silk
 - (d) Moth silk
3. Paheli wanted to buy a gift made of animal fibre obtained without killing the animal. Which of the following would be the right gift for her to buy?
 - (a) Woollen shawl
 - (b) Silk scarf
 - (c) Animal fur cap
 - (d) Leather jacket
4. Silk fibre is obtained from
 - (a) fleece of sheep
 - (b) cotton ball
 - (c) cocoon
 - (d) shiny jute stalk
5. Wool fibre cannot be obtained from which of the following?
 - (a) Goat
 - (b) Llama
 - (c) Alpaca
 - (d) Moth

6. Selective breeding is a process of
 - (a) selecting the offsprings with desired properties.
 - (b) selecting the parents with desired properties.
 - (c) selecting an area for breeding.
 - (d) selecting fine hair for good quality wool.
7. The general process that takes place at a sheep shearing shed is
 - (a) removal of fleece.
 - (b) separating hair of different textures.
 - (c) washing of sheep fibre to remove grease.
 - (d) rolling of sheep fibre into yarn.
8. The term sericulture is used for
 - (a) culture of bacteria.
 - (b) rearing of silkworm.
 - (c) making silk fabric from silk yarn.
 - (d) production of sarees.
9. Reeling of silk is
 - (a) a process of making silk reels.
 - (b) spinning of silk fibres.
 - (c) weaving of silk cloth.
 - (d) the process of taking silk threads from cocoon.
10. Silkworms secrete fibre made of
 - (a) fat
 - (b) cellulose
 - (c) protein
 - (d) nylon

VERY SHORT ANSWER QUESTIONS

11. Fill in the blanks in the following statements.
 - (a) _____ and _____ fibres are obtained from animals.
 - (b) Silk fibres come from _____ of silk _____.
 - (c) Wool yielding animals bear _____ on their body.
 - (d) Hair trap a lot of _____, which is a poor _____ of heat.

12. State whether the following statements are True or False. If false, correct them.
- (a) Silkworms are caterpillars of silk moth.
 - (b) In India, camels and goats are generally reared for obtaining wool.
 - (c) The rearing of silkworms for obtaining silk is called silviculture.
 - (d) In the process of obtaining wool from fleece, sorting is done after scouring.
 - (e) Yak hair are not used to make woollen fabric.
13. How do the hair of certain animals help in keeping their bodies warm?

SHORT ANSWER QUESTIONS

14. Match the items of **Column I** with the items given in **Column II**.

| Column I | Column II |
|---------------------|------------------------|
| (a) Yak wool | (i) Sheared hair |
| (b) Angora goats | (ii) Silkworm |
| (c) Mulberry leaves | (iii) Tibet and Ladakh |
| (d) Scouring | (iv) Jammu and Kashmir |

15. Various steps involved to obtain wool from fleece are given here.
- (i) Picking out the burrs
 - (ii) Dyeing in various colours
 - (iii) Shearing
 - (iv) Scouring
 - (v) Sorting

Write the above steps in the correct sequence in which they are carried out.

16. Some words related with silk are jumbled up. Write them in their correct form.
- TURECULRISE
 - WILSMORK
 - BELMURRY
 - RINGLEE
17. Figure 3.1 shows three rings of circles with letters in them. Some of these letters in each ring can form the name of one wool yielding animal. Find the names of these animals.

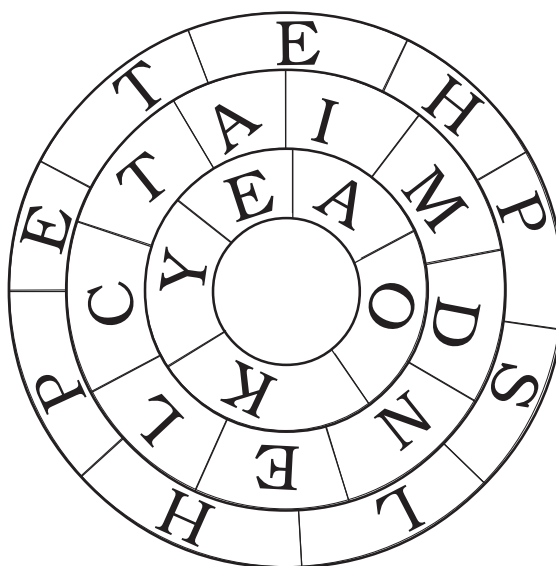


Fig. 3.1

18. Write a caption for each of the figures given as Figure 3.2 (a–d).

(a)



(b)



**Fig. 3.2**

19. Steps for the production of silk are given below in a jumbled order. Arrange them in their proper sequence.
- (a) Eggs are warmed to a suitable temperature for the larvae to hatch from eggs.
 - (b) Fibers are taken out from the cocoon.
 - (c) After 25 to 30 days, the caterpillars stop eating and start spinning cocoons.
 - (d) The larvae/caterpillars or silkworms are kept in clean trays along with freshly chopped mulberry leaves.
 - (e) Female silk moths lay eggs.
 - (f) Cocoons are kept under the sun or boiled in water.
20. A wholesale woollen fibre dealer gets the woollen fibre of different textures sorted for various purposes. Match the items in **Column I** with the woollen fibre in **Column II**.

| Column I | Column II |
|---------------------|--------------------|
| (a) Pashmina shawl | (i) Camel wool |
| (b) Woollen carpet | (ii) Angora wool |
| (c) Baby blanket | (iii) Kashmir goat |
| (d) Woollen sweater | (iv) Sheep wool |

LONG ANSWER QUESTIONS

21. Complete the paragraph related to the life history of silk moth by filling in the blanks.
- The ____ (a) ____ silk moth lays ____ (b) ____, from which hatch ____ (c) ____ called ____ (d) ____ or ____ (e) _____. They grow in size and when the caterpillar is ready to enter the next stage of its life history called ____ (f) ____, it first weaves a covering to hold itself, which is known as ____ (g) _____.
22. Paheli went to the market to buy sarees for her mother. She took out a thread from the edge of the two sarees shown by the shopkeeper and burnt them. One thread burnt with a smell of burning hair and the other burnt with the smell of burning paper. Which thread is from a pure cotton saree and which one from a pure silk saree? Give reason for your answer.
23. Explain the phrase – “Unity is Strength” on the basis of the making of fabric from fibre.
24. Write various steps for processing fibres into wool.
25. Describe the life history of silk moth with the help of figures of various stages.

LONG ANSWER QUESTIONS

20. Boojho, Paheli and their friend Golu were provided with a test tube each containing China rose solution which was pink in colour. Boojho added two drops of solution 'A' in his test tube and got dark pink colour. Paheli added 2 drops of solution 'B' to her test tube and got green colour. Golu added 2 drops of solution 'C' but could not get any change in colour. Suggest the possible cause for the variation in their results.
21. Fill in the cross word given as Figure 5.2 with the help of the clues provided.

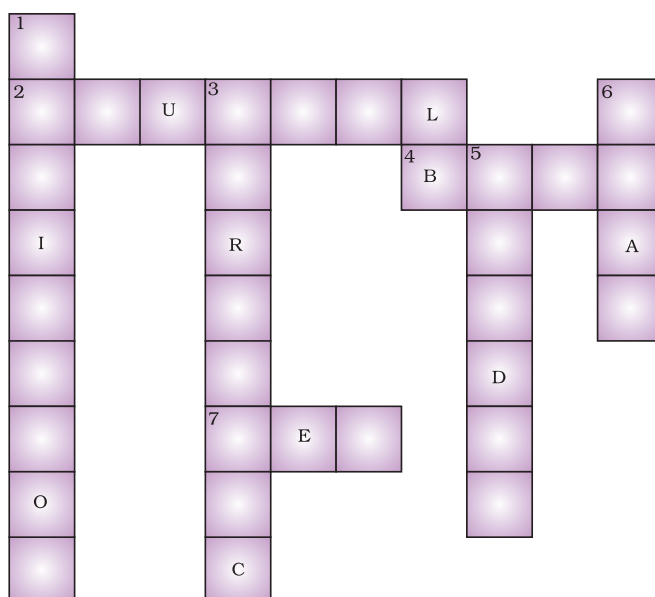


Fig. 5.2

Across

- (2) The solution which does not change the colour of either red or blue litmus.
- (4) Phenolphthalein gives pink colour in this type of solution.
- (7) Colour of blue litmus in lemon juice.

Down

- (1) It is used to test whether a substance is acidic or basic.
- (3) It is a natural indicator and gives pink colour in basic solution.
- (5) Nature of ant's sting.
- (6) It is responsible for increase in temperature during a neutralisation reaction.

22. A farmer was unhappy because of his low crop yield. He discussed the problem with an agricultural scientist and realised that the soil of his field was either too acidic or too basic. What remedy would you suggest the farmer to neutralise the soil?
23. You are provided with four test tubes containing sugar solution, baking soda solution, tamarind solution, salt solution. Write down an activity to find the nature (acidic/basic/neutral) of each solution.
24. You are provided with three test tubes A, B and C as shown in Figure 5.3 with different liquids. What will you observe when you put
- a piece of blue litmus paper in each test tube.
 - a piece of red litmus paper in each test tube.
 - a few drops of phenolphthalein solution to each test tube.

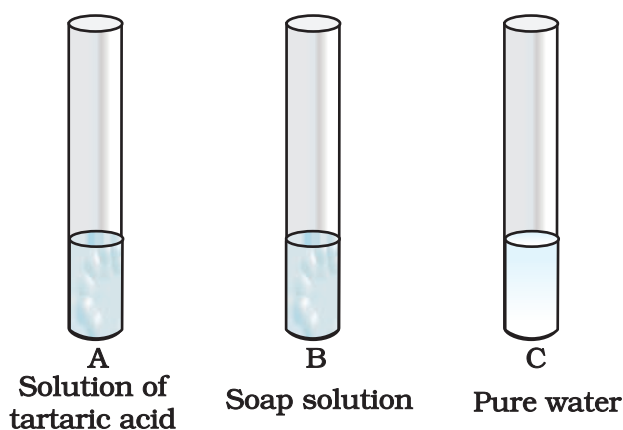


Fig 5.3

25. Paheli observed that most of the fish in the pond of her village were gradually dying. She also observed that the waste of a factory in their village is flowing into the pond which probably caused the fish to die.
- Explain why the fish were dying.
 - If the factory waste is acidic in nature, how can it be neutralised?
26. Explain two neutralisation reactions related to daily life situation.

4

Heat

MULTIPLE CHOICE QUESTIONS

1. A marble tile would feel cold as compared to a wooden tile on a winter morning, because the marble tile
 - (a) is a better conductor of heat than the wooden tile.
 - (b) is polished while wooden tile is not polished.
 - (c) reflects more heat than wooden tile.
 - (d) is a poor conductor of heat than the wooden tile.
2. A beggar wrapped himself with a few layers of newspaper on a cold winter night. This helped him to keep himself warm because
 - (a) friction between the layers of newspaper produces heat.
 - (b) air trapped between the layers of newspaper is a bad conductor of heat.
 - (c) newspaper is a conductor of heat.
 - (d) newspaper is at a higher temperature than the temperature of the surrounding.
3. Paheli and Boojho measured their body temperature. Paheli found her's to be 98.6°F and Boojho recorded 37°C . Which of the following statement is true?
 - (a) Paheli has a higher body temperature than Boojho.
 - (b) Paheli has a lower body temperature than Boojho.
 - (c) Both have normal body temperature.
 - (d) Both are suffering from fever.
4. Boojho has three thermometers as shown in Figure 4.1. He wants to measure the temperature of his body and that of boiling water. Which thermometer (s) should he choose?



(i)



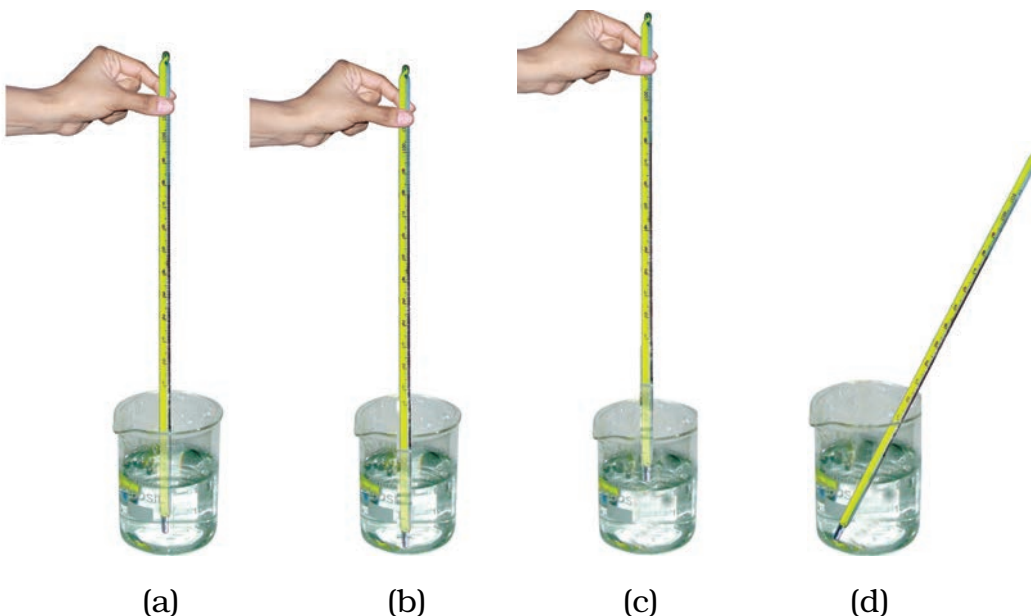
(ii)



(iii)

Fig. 4.1

- (a) Thermometer (i) or (iii) for measuring body temperature and (ii) for measuring the temperature of boiling water.
- (b) Thermometer (i) for measuring temperature of both.
- (c) Thermometer (ii) for measuring temperature of both.
- (d) Thermometer (iii) for measuring temperature of both.
5. Four arrangements to measure temperature of ice in beaker with laboratory thermometer are shown in Figure 4.2 (a, b, c and d). Which one of them shows the correct arrangement for accurate measurement of temperature?

**Fig. 4.2**

6. Fig 4.3 (a–d) shows a student reading a doctor's thermometer. Which of the figure indicates the correct method of reading temperature?

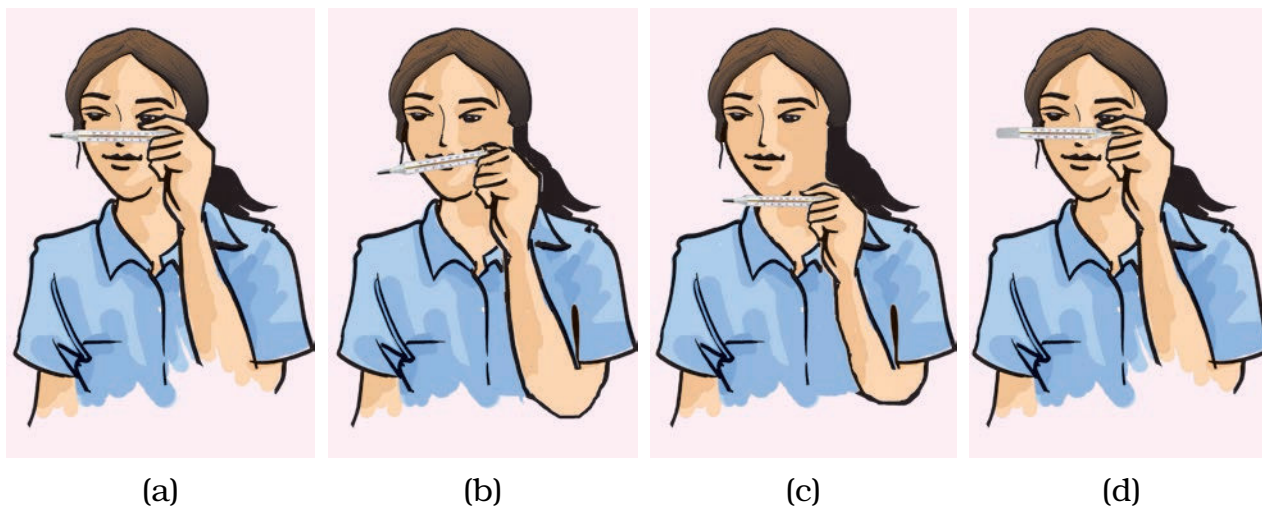


Fig. 4.3

7. Figure 4.4. (a–d) shows the readings on four different thermometers. Indicate which of the reading shows the normal human body temperature?

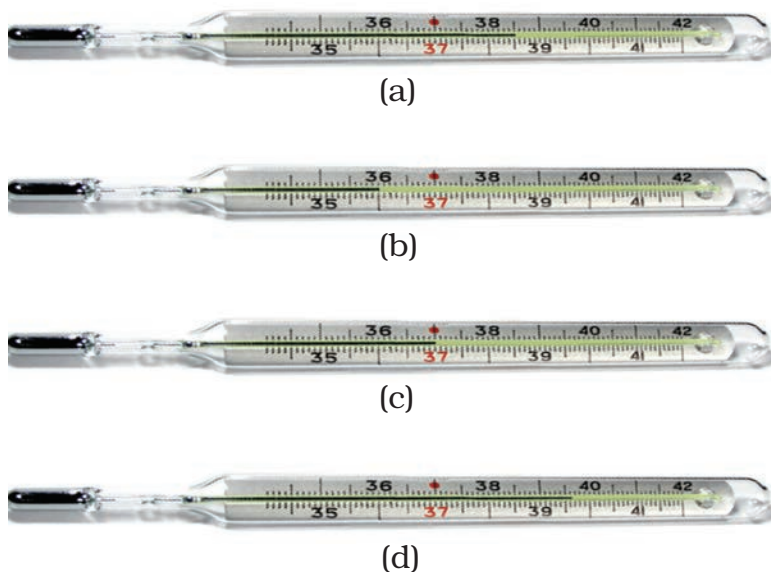


Fig. 4.4

VERY SHORT ANSWER QUESTIONS

8. Shopkeepers selling ice blocks usually cover them with jute sacks. Explain why.
9. A laboratory thermometer A is kept 7 cm away on the side of the flame while a similar thermometer B is kept 7 cm above the flame of a candle as shown in Figure 4.5.

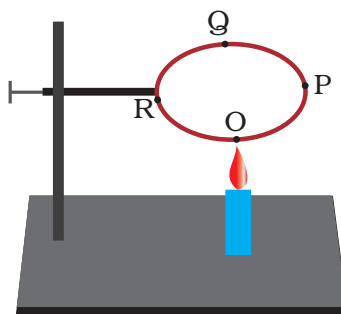
**Fig. 4.5**

Which of the thermometers, A or B, will show a greater rise in temperature? Give reason for your answer.

10. To keep her soup warm Paheli wrapped the container in which it was kept with a woollen cloth. Can she apply the same method to keep a glass of cold drink cool? Give reason for your answer.
11. In a mercury thermometer, the level of mercury rises when its bulb comes in contact with a hot object. What is the reason for this rise in the level of mercury?

SHORT ANSWER QUESTIONS

12. A circular metal loop is heated at point O as shown in Figure 4.6.

**Fig. 4.6**

- (i) In which direction would heat flow in the loop?
 - (ii) In which order the pins at points P, Q and R fixed with the help of wax fall if points O, P, Q and R are equidistant from each other?
13. In the arrangements A and B shown in Figure 4.7, pins P and Q are fixed to a metal loop and an iron rod with the help of wax. In which case are both the pins likely to fall at different times? Explain.

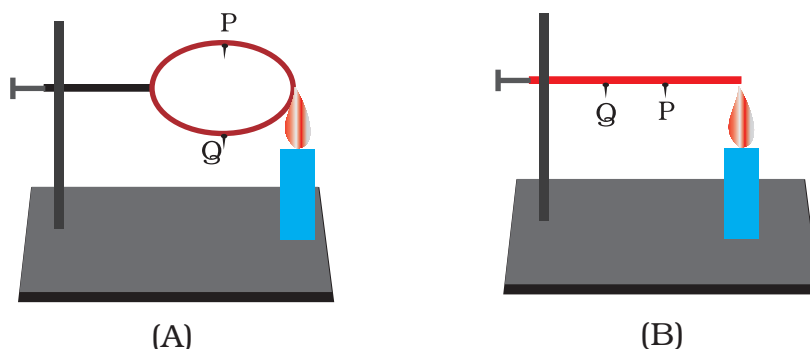


Fig. 4.7

14. For setting curd, a small amount of curd is added to warm milk. The microbes present in the curd help in setting if the temperature of the mixture remains approximately between 35°C to 40°C . At places, where room temperature remains much below the range, setting of curd becomes difficult. Suggest a way to set curd in such a situation.
15. You may have noticed that a few sharp jerks are given to clinical thermometer before using it. Why is it done so?
16. Why is it advised not to hold the thermometer by its bulb while reading it?
17. At a camp site there are tents of two shades – one made with black fabric and the other with white fabric. Which one will you prefer for resting on a hot summer afternoon? Give reason for your choice. Would you like to prefer the same tent during winter?
18. While constructing a house in a coastal area, in which direction should the windows preferably face and why?

19. Observe the picture given as Figure 4.8. Water is being boiled in a pan of wide base.

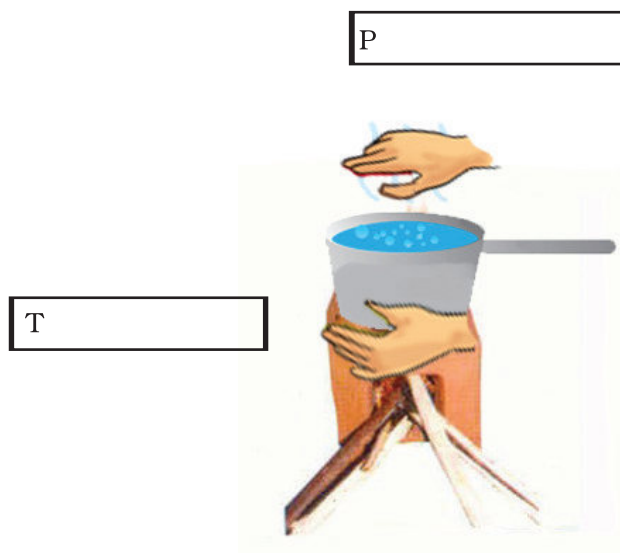


Fig. 4.8

- (i) Which position P or T will feel warmer?
(ii) Fill up the boxes P and T to indicate the mode of flow of heat to the hand.
20. Look at Figure 4.9.

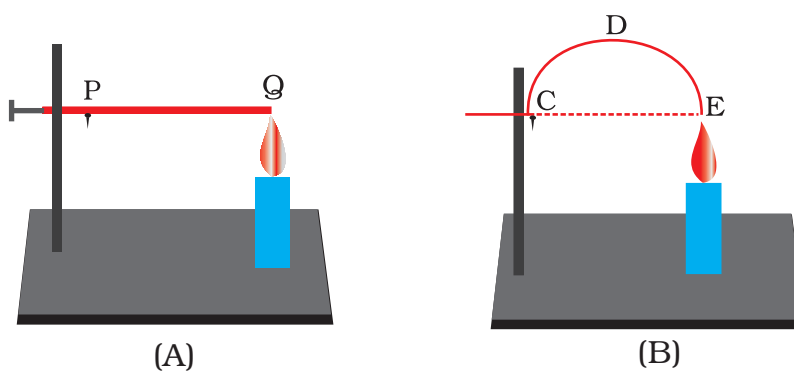


Fig. 4.9

The length of wire PQ in case of A is equal to the diameter of the semicircle formed by the wire CDE, in case B. One pin is attached to each wire with the help of wax as shown in Figure 4.9. Which pin will fall first? Explain.

5

Acids, Bases and Salts

MULTIPLE CHOICE QUESTIONS

1. The correct way of making a solution of acid in water is to
 - (a) add water to acid.
 - (b) add acid to water.
 - (c) mix acid and water simultaneously.
 - (d) add water to acid in a shallow container.
2. Products of a neutralisation reaction are always
 - (a) an acid and a base.
 - (b) an acid and a salt.
 - (c) a salt and water.
 - (d) a salt and a base.
3. Turmeric is a natural indicator. On adding its paste to acid and base separately, which colours would be observed
 - (a) Yellow in both acid and base.
 - (b) Yellow in acid and red in base.
 - (c) Pink in acid and yellow in base.
 - (d) Red in acid and blue in base.
4. Phenolphthalein is a synthetic indicator and its colours in acidic and basic solutions, respectively are
 - (a) red and blue.
 - (b) blue and red.
 - (c) pink and colourless.
 - (d) colourless and pink
5. When the soil is too basic, plants do not grow well in it. To improve its quality what must be added to the soil?
 - (a) Organic matter
 - (b) Quick lime
 - (c) Slaked lime
 - (d) Calamine solution

6. 'Litmus', a natural dye is an extract of which of the following?
 - (a) China rose (*Gudhal*)
 - (b) Beetroot
 - (c) Lichen
 - (d) Blue berries (*Jamun*)
7. Neutralisation reaction is a
 - (a) physical and reversible change.
 - (b) physical change that cannot be reversed.
 - (c) chemical and reversible change.
 - (d) chemical change that cannot be reversed.
8. A solution changes the colour of turmeric indicator from yellow to red. The solution is
 - (a) basic
 - (b) acidic
 - (c) neutral
 - (d) either neutral or acidic
9. Which of the following set of substances contain acids?
 - (a) Grapes, lime water
 - (b) Vinegar, soap
 - (c) Curd, milk of magnesia
 - (d) Curd, vinegar
10. On adding phenolphthalein indicator to a colourless solution, no change is observed. What is the nature of this solution?
 - (a) Basic
 - (b) Either acidic or basic
 - (c) Either acidic or neutral
 - (d) Either basic or neutral
11. Which of the following is an acid-base indicator?
 - (a) Vinegar
 - (b) Lime water
 - (c) Turmeric
 - (d) Baking soda

VERY SHORT ANSWER QUESTIONS

12. Look at the given reaction.

Hydrochloric acid + Sodium hydroxide (base) \longrightarrow Sodium chloride (salt) + Water

Sodium chloride formed in this reaction remains in solution form. Can we get solid sodium chloride from this solution? Suggest a method (if any).

13. State whether the following statements are true or false. Correct the false statements.

- (a) All substances are either acidic or basic.
- (b) A compound if acidic will turn all indicators red.
- (c) Lime water turns red litmus blue.
- (d) Common salt dissolved in water turns blue litmus red.
- (e) Phenolphthalein is a natural indicator.
- (f) Calamine can be used to treat ant's sting.
- (g) Lemon water is basic in nature.

14. Paheli is suffering from indigestion due to acidity. Is it advisable to give her orange juice in this situation and why?

SHORT ANSWER QUESTIONS

15. Look at Figure 5.1 which shows solutions taken in test tubes A,B,C and D. What colour is expected when a piece of red litmus paper is dropped in each test tube? Nature of the solutions is given in the table for your help.

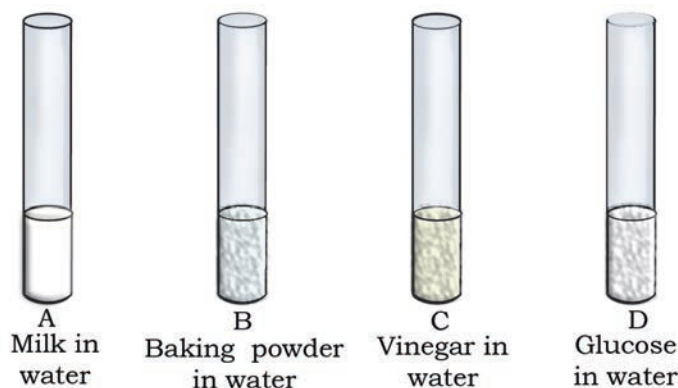


Fig. 5.1

| Test Tube | Nature of Solution | Change in colour of red litmus |
|-----------|--------------------|--------------------------------|
| A | Neutral | |
| B | Basic | |
| C | Acidic | |
| D | Neutral | |

16. While playing in a park, a child was stung by a wasp. Some elders suggested applying paste of baking soda and others lemon juice as remedy. Which remedy do you think is appropriate and why?
17. Form a sentence using the following words – baking soda, ant bite, moist, effect, neutralised, rubbing.
18. Match the substances in **Column I** with those in **Column II**.

| Column I | Column II |
|-----------------------|----------------------|
| (a) Tartaric acid | (i) soap |
| (b) Calcium hydroxide | (ii) curd |
| (c) Formic acid | (iii) unripe mangoes |
| (d) Sodium hydroxide | (iv) ant's sting |
| (e) Lactic acid | (v) lime water |

19. Fill the blanks in the following sentences
- Lemon juice and vinegar taste _____ because they contain _____.
 - Turmeric and litmus are _____ acid-base indicators.
 - Phenolphthalein gives _____ colour with lime water.
 - When an acidic solution is mixed with a basic solution, they _____ each other forming _____ and water.

LONG ANSWER QUESTIONS

20. Boojho, Paheli and their friend Golu were provided with a test tube each containing China rose solution which was pink in colour. Boojho added two drops of solution 'A' in his test tube and got dark pink colour. Paheli added 2 drops of solution 'B' to her test tube and got green colour. Golu added 2 drops of solution 'C' but could not get any change in colour. Suggest the possible cause for the variation in their results.
21. Fill in the cross word given as Figure 5.2 with the help of the clues provided.

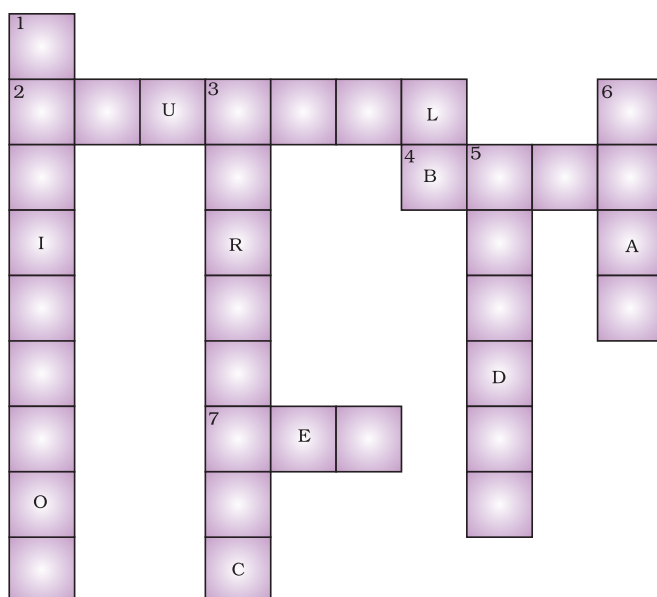


Fig. 5.2

Across

- (2) The solution which does not change the colour of either red or blue litmus.
- (4) Phenolphthalein gives pink colour in this type of solution.
- (7) Colour of blue litmus in lemon juice.

Down

- (1) It is used to test whether a substance is acidic or basic.
- (3) It is a natural indicator and gives pink colour in basic solution.
- (5) Nature of ant's sting.
- (6) It is responsible for increase in temperature during a neutralisation reaction.

22. A farmer was unhappy because of his low crop yield. He discussed the problem with an agricultural scientist and realised that the soil of his field was either too acidic or too basic. What remedy would you suggest the farmer to neutralise the soil?
23. You are provided with four test tubes containing sugar solution, baking soda solution, tamarind solution, salt solution. Write down an activity to find the nature (acidic/basic/neutral) of each solution.
24. You are provided with three test tubes A, B and C as shown in Figure 5.3 with different liquids. What will you observe when you put
- a piece of blue litmus paper in each test tube.
 - a piece of red litmus paper in each test tube.
 - a few drops of phenolphthalein solution to each test tube.

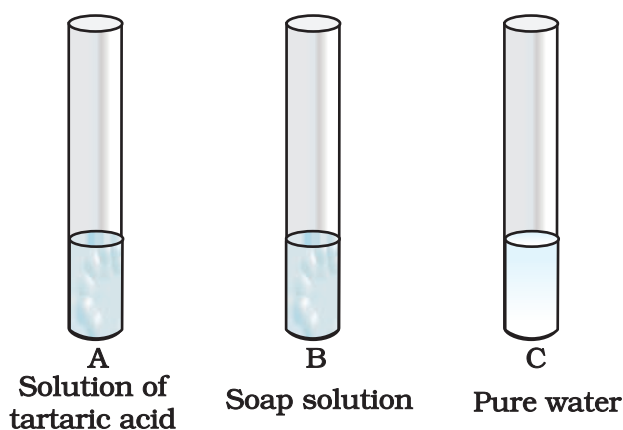


Fig 5.3

25. Paheli observed that most of the fish in the pond of her village were gradually dying. She also observed that the waste of a factory in their village is flowing into the pond which probably caused the fish to die.
- Explain why the fish were dying.
 - If the factory waste is acidic in nature, how can it be neutralised?
26. Explain two neutralisation reactions related to daily life situation.

6

Physical and Chemical Changes

MULTIPLE CHOICE QUESTIONS

1. Which of the following is a physical change?
 - (a) Rusting of iron
 - (b) Combustion of magnesium ribbon
 - (c) Burning of candle
 - (d) Melting of wax
2. Which of the following is a chemical change?
 - (a) Twinkling of stars
 - (b) Cooking of vegetables
 - (c) Cutting of fruits
 - (d) Boiling of water
3. A chemical change may involve –
 - (a) change in colour only
 - (b) change in temperature only
 - (c) evolution of gas only
 - (d) any or all of the above
4. Which of the following is/are true when milk changes into curd?
 - (i) Its state is changed from liquid to semi solid.
 - (ii) It changes colour.
 - (iii) It changes taste.
 - (iv) The change cannot be reversed.

Choose the correct option from below :

- (a) (i) and (ii) are correct
 - (b) (ii) and (iii) are correct
 - (c) (i), (iii) and (iv) are correct
 - (d) (i) to (iv) are correct
5. A man painted his main gate made up of iron, to
 - (i) prevent it from rusting.
 - (ii) protect it from sun.

- (iii) make it look beautiful.
- (iv) make it dust free.

Which of the above statement(s) is/are correct?

- (a) (i) and (ii)
 - (b) (ii) and (iii)
 - (c) only (ii)
 - (d) (i) and (iii)
6. Iron pillar near the Qutub Minar in Delhi is famous for the following facts. Which of these facts is responsible for its long stability?
- (a) It is more than 7 metres high.
 - (b) It weighs about 6000 kg.
 - (c) It was built more than 1600 years ago.
 - (d) It has not rusted after such a long period.
7. Galvanisation is a process used to prevent the rusting of which of the following?
- (a) Iron
 - (b) Zinc
 - (c) Aluminium
 - (d) Copper
8. Paheli's mother made a concentrated sugar syrup by dissolving sugar in hot water. On cooling, crystals of sugar got separated. This indicates a –
- (a) physical change that can be reversed.
 - (b) chemical change that can be reversed.
 - (c) physical change that cannot be reversed.
 - (d) chemical change that cannot be reversed.
9. Which of the following statement is incorrect for a chemical reaction?
- (a) Heat may be given out but never absorbed.
 - (b) Sound may be produced.
 - (c) A colour change may take place.
 - (d) A gas may be evolved.
10. Two drops of dilute sulphuric acid were added to 1 g of copper sulphate powder and then small amount of hot water was

added to dissolve it (step I). On cooling, beautiful blue coloured crystals got separated (step II). Step I and step II are:

- (a) physical and chemical changes respectively.
- (b) chemical and physical changes respectively.
- (c) both physical change.
- (d) both chemical change.

VERY SHORT ANSWER QUESTIONS

11. State whether the following statements are true or false:
- (a) When a candle burns, both physical and chemical changes take place.
 - (b) Anaerobic bacteria digest animal waste and produce biogas.
 - (c) Ships suffer a lot of damage though they are painted.
 - (d) Stretching of rubber band is not a physical change.
12. Melting of wax is a change where a solid changes to liquid state. Give one more such change which you observe in your surroundings.
13. What kind of change is shown by tearing of paper?

SHORT ANSWER QUESTIONS

14. Match the items of **Column I** with the items of **Column II**.

| Column I | Column II |
|--|----------------------------|
| (a) Large crystals | (i) Turns lime water milky |
| (b) Depositing a layer of zinc on iron | (ii) Physical change |
| (c) Souring of milk | (iii) Rust |
| (d) Carbon dioxide | (iv) Sugar candy (Mishri) |
| (e) Iron oxide | (v) Chemical change |
| (f) Dissolving common salt in water | (vi) Galvanisation |

15. Fill in the blanks in the following statements using the words given in the box.

rusted, colourful, substance, chemical, physical,
reversible, iron oxide, object

- (a) Making sugar solution is a _____ change.
 - (b) A physical change is generally _____.
 - (c) Grinding of wheat grain changes its size. It is a _____ change.
 - (d) Iron benches kept in lawns and gardens get _____. It is a _____ change because a new _____ is formed.
16. Classify the following processes into physical or chemical changes:
- (i) Beating of aluminium metal to make aluminium foil.
 - (ii) Digestion of food.
 - (iii) Cutting of a log of wood into pieces.
 - (iv) Burning of crackers.
17. Write word equations for two chemical reactions with the help of materials given in the box.

Air, copper sulphate, iron, vinegar, iron oxide,
carbon dioxide, iron sulphate, copper, lime water, water

18. Explain the following:
- (a) Lime water turns milky on passing carbon dioxide gas into it.
 - (b) Bubbles are produced when acetic acid is added to a solution of sodium hydrogencarbonate.

LONG ANSWER QUESTIONS

19. Give two examples for each of the following cases:
- (a) Physical changes which are reversible.
 - (b) Physical changes which are not reversible.
 - (c) Chemical changes.

20. Give an example of a chemical reaction for each of the following situations:
- (a) A change in colour is observed.
 - (b) A gas is evolved.
 - (c) Sound is produced.
21. If you leave a piece of iron in the open for a few days, it acquires a film of brownish substance, called rust.
- (a) Do you think rust is different from iron?
 - (b) Can you change rust back into iron by some simple method?
 - (c) Do you think formation of rust from iron is a chemical change?
 - (d) Give two other examples of a similar type of change.
22. A student took a solution of copper sulphate in a beaker and put a clean iron nail into it and left it for about an hour.
- (a) What changes do you expect?
 - (b) Are these changes chemical in nature?
 - (c) Write a word equation for the chemical change, if any.

7

Weather, Climate and Adaptation of Animals to Climate

MULTIPLE CHOICE QUESTIONS

1. The maximum and minimum temperature displayed daily in the weather bulletin refer to the –
 - (a) highest day temperature and lowest night temperature of the day.
 - (b) highest day temperature and highest night temperature of the month.
 - (c) temperature recorded at 12 noon and at mid night (00.00 hrs).
 - (d) average highest temperature of day and average lowest temperature of night.
2. Out of the given definitions, which is the most appropriate definition of climate?
 - (a) Changes in weather conditions in a year.
 - (b) Average weather pattern of many years.
 - (c) Change in weather pattern in a few years.
 - (d) Weather conditions during summer.
3. Which of the following briefly describes the desert climate?
 - (a) Hot and humid
 - (b) Dry and humid
 - (c) Hot and dry
 - (d) Hot and wet
4. Paheli went to a wildlife sanctuary where she saw dense vegetation of trees, shrubs, herbs and also a variety of animals like monkeys, birds, elephants, snakes, frogs, etc. The most likely location of this sanctuary is in the –
 - (a) temperate region
 - (b) tropical region
 - (c) polar region
 - (d) coastal region

5. Given below are some adaptive features of animals:

- (i) Layer of fat under the skin
- (ii) Long, curved and sharp claws
- (iii) Slippery body
- (iv) Thick white fur

Which of them are the adaptive features of a polar bear?

- (a) (i) only
- (b) (i) and (ii) only
- (c) (i), (ii) and (iii) only
- (d) (i), (ii), and (iv) only

6. Which of the following statement is incorrect for penguins?

- (a) They huddle together
- (b) They cannot swim
- (c) They have webbed feet
- (d) They have streamlined body

7. Read the following environmental conditions of tropical rain forests.

- (i) Hot and humid climate
- (ii) Unequal lengths of day and night
- (iii) Abundant rain fall
- (iv) Abundant light and moisture

Identify the conditions from the above list that are responsible for the presence of large number of plants and animals in tropical rain forests.

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

8. The coldest region on earth is the –

- (a) polar region
- (b) tropical region
- (c) temperate region
- (d) coastal region

9. Choose the odd one from the following options :

- (a) Thick layer of fat under the skin
- (b) White fur
- (c) Long grasping tail
- (d) Wide and large feet with sharp claws

VERY SHORT ANSWER QUESTIONS

10. "A fish dies when taken out of water whereas a wall lizard will die if kept under water." Mention the term used to describe such abilities that allow fish and lizard to survive in their respective habitats.
11. Give one example of an animal that can live both in water and on land.
12. State whether the following statements are True or False. Correct the false statements.
 - (a) It is easy to predict weather rather than climate.
 - (b) Since very few prey are available, polar bear does not need to have strong sense of smell.
 - (c) Penguins stick together to fight the cold polar climate.
 - (d) Tropical rain forests are cool and humid throughout the year because of heavy rains all the time.
13. Unscramble the following words using the hints given against them.
 - (i) MATLICE (Hint: weather pattern in a region over a period of time)
 - (ii) AROPL (Hint: coolest region on earth)
 - (iii) TREHMEOMRET (Hint: used to measure temperature)
 - (iv) UHIDYTMI (Hint: feature of weather)

SHORT ANSWER QUESTIONS

14. Match the animals mentioned in **Column I** with their characteristic features given in **Column II**.

| Column I | Column II |
|-------------------------|----------------------------|
| (a) Red eyed frog | (i) Very sensitive hearing |
| (b) Penguin | (ii) Streamlined body |
| (c) Tiger | (iii) Silver-white mane |
| (d) Lion-tailed macaque | (iv) Sticky pads on feet |

15. Why is it difficult to predict the weather of a place while it is easy to predict its climate?

16. Name two animals each that live in Polar region and Tropical rain forests.
17. Write two common adaptive features of a polar bear which help in keeping it warm.
18. Mention two adaptive features of penguin that help it in swimming.
19. Differentiate between:
 - (i) Weather and climate
 - (ii) Humidity and rainfall
 - (iii) Climates of polar region and tropical rain forest
 - (iv) Maximum and minimum temperatures of the day

LONG ANSWER QUESTIONS

20. Fill in the blanks in the paragraph given below.
 Weather of a place is the day-to-day condition of the _____ (a) _____ with respect to _____ (b) _____, _____ (c) _____, _____ (d) _____, _____ (e) _____ at that place, while climate is the _____ (f) _____ weather pattern taken over many years.
21. Given below is a list of climatic conditions and some examples of animals. Read them carefully and place the items in the relevant columns as shown.

Penguin, Gorilla, Monkey, Reindeer, Assam, Greenland, Sun does not rise for six months, Hot and humid climate, Days and nights are almost equal in length throughout the year, Winter temperature around -37°C , Western Ghats

| Tropical Rain Forest | Polar Region |
|-------------------------|--------------|
| • Hot and Humid Climate | • Penguin |
| | |
| | |
| | |
| | |
| | |
| | |

8

Wind, Storm and Cyclone

MULTIPLE CHOICE QUESTIONS

1. A fire alarm usually detects smoke in case of fire. Where should such an alarm be placed in a room?
 - (a) Near the door
 - (b) On the floor
 - (c) On any wall
 - (d) On the ceiling
2. Four schematic diagrams are shown in Figure 8.1 to depict the direction of sea breeze. Which of them gives the correct direction?

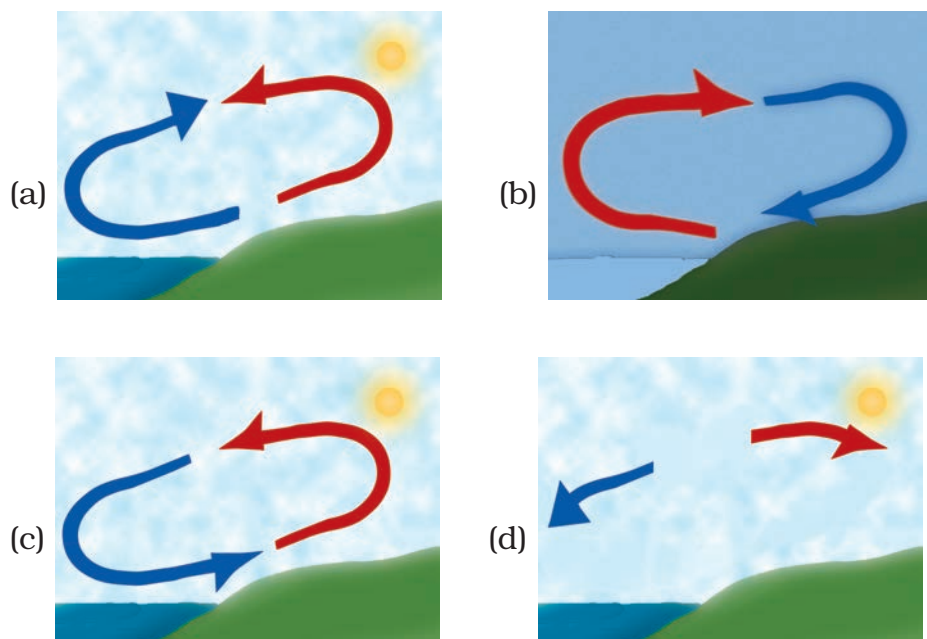


Fig. 8.1

3. Figure 8.2 shows a child blowing air with a straw near the opening of another straw which has its other end in a soft drink bottle. It was observed that the level of the soft drink in

the straw rises up as soon as air is blown over its open end. Which one of the following best explains the reason for rise in level of the drink?

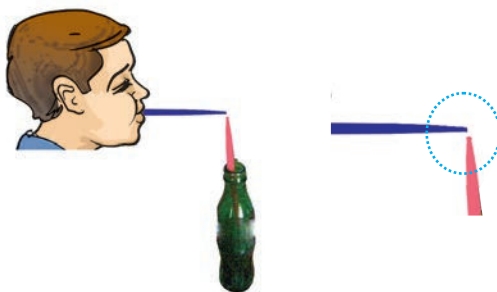


Fig. 8.2

- (a) Blowing of air decreases pressure over the opening of the straw.
 - (b) The straw of the soft drink bottle collapses when air is blown over its open end.
 - (c) Blowing of air warms up the air inside the straw.
 - (d) Blowing of air increases the pressure on the surface of soft drink in the bottle.
4. Following are precautions one must take in case a storm is accompanied by lightning.
- (i) Do not take shelter under a tree.
 - (ii) Do not take shelter under an umbrella with a metallic end.
 - (iii) Do not take shelter in open garages, storage sheds, etc.
 - (iv) Do not take shelter in a bus in the open.

Which one of these is not correct?

- (a) (i) (b) (ii)
 - (c) (iii) (d) (iv)
5. Which of the following place is most likely to be affected by a cyclone?
- (a) Mumbai
 - (b) Puri
 - (c) Goa
 - (d) Porbandar

6. A curtain is hanging at the entrance of a room. A long corridor runs at right angles to the door, that is parallel to the curtain. If a strong wind blows along the corridor, the curtain will
- (a) get pushed inside the room.
 - (b) get pushed outside the room.
 - (c) get collected towards one end/swirled.
 - (d) remain unaffected.

VERY SHORT ANSWER QUESTIONS

7. Why is Chandigarh unlikely to be affected by a cyclone?
8. Name the ocean which is mainly responsible to bring rain bearing monsoon winds to Kerala coast in June every year?
9. Fill in the blanks.
- (i) Air around us exerts _____ .
 - (ii) The moving air is called _____ .
 - (iii) The main cause of wind movement is uneven _____ on the earth.
 - (iv) High speed wind can cause cyclone in regions of _____ pressure.
10. State whether the following statements are True or False:
- (i) If wind flows from land to the ocean, then it is daytime.
 - (ii) A very high pressure system, with very high speed wind surrounding it forms a cyclone.
 - (iii) The coast line of India is not vulnerable to cyclones.
 - (iv) Warm air is lighter than cool air.
11. To expel hot air out of the kitchen, 'A' has an exhaust fan fitted on the window of her kitchen and 'B' has a similar exhaust fan fitted on the wall near the ceiling of her kitchen. Which of the exhaust fan will expel the hot air more effectively? Explain why?
12. Why is it advisable not to shut all the doors and windows during a storm?
13. A flat in Mumbai with a balcony facing the sea has some clothes hung on a clothes line in the balcony. Towards which direction the clothes will be blown in the afternoon? Explain.

14. Figure 8.3 shows a diagrammatic representation of trees in the afternoon along a sea coast. State on which side is the sea; A or B? Give reasons for your choice.

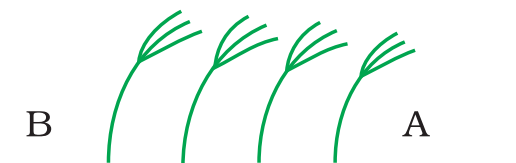


Fig 8.3

15. A flag mounted on a flag post near the sea coast flutters in the direction of sea. At what time of the day does this happen – at midnight or in the afternoon?

SHORT ANSWER QUESTIONS

16. Match **Column I** with **Column II**. There can be more than one match.

| Column I | Column II |
|--------------------|-----------------|
| (a) on heating air | (i) descends |
| (b) on cooling air | (ii) expands |
| | (iii) contracts |
| | (iv) rises |

17. Paheli kept an empty bottle made of plastic inside a refrigerator. After few hours, when she opened the refrigerator she found the bottle had collapsed. Explain the possible reason.
18. When strong/high speed wind blows, an umbrella held upright at times gets upturned. Explain the reason.
19. Suggest some precautions to be taken to prevent the roof of a tin sheet from flying away during a fierce wind storm.

LONG ANSWER QUESTIONS

20. Describe an activity to demonstrate that warm air is lighter than cool air.
21. The picture in Figure 8.4 shows tree line along the sea coast on an island near the equator. As shown, the tree tops are permanently bent in one direction. Are the trees bent towards the sea or away from it? Explain.

**Fig. 8.4**

22. Identify the names of six natural phenomena from the following word diagram given as Figure 8.5.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| G | C | H | T | H | T | E | N | M | R |
| R | C | Y | H | O | O | N | C | Z | P |
| V | L | O | U | E | R | O | E | R | T |
| A | N | C | N | A | N | N | L | C | L |
| H | T | H | D | B | A | D | A | P | I |
| L | U | N | E | K | D | C | Y | D | G |
| H | U | R | R | I | C | A | N | E | H |
| W | C | T | S | L | M | N | O | P | T |
| M | Y | O | T | Y | P | H | O | O | N |
| O | C | R | O | H | C | T | P | Q | I |
| C | L | N | R | U | A | Y | R | S | N |
| F | O | A | M | R | N | P | T | U | G |
| P | N | D | X | R | E | H | Y | E | N |
| Z | E | O | A | I | O | U | N | Y | B |

Fig. 8.5

9

Soil

MULTIPLE CHOICE QUESTIONS

1. The microorganisms present in the soil require moisture (water) and nutrients for growth and survival. Choose from the options below the habitat (place) where the soil has plenty of water and nutrients.
 - (a) Desert
 - (b) Forest
 - (c) Open field
 - (d) Cricket ground
2. Availability of water and minerals in the soil for maximum absorption by roots is in the –
 - (a) B-horizon
 - (b) C-horizon
 - (c) A-horizon
 - (d) surface of soil
3. Soil conservation measures are mainly aimed at protecting which of the following?
 - (a) Plants
 - (b) Top soil
 - (c) Sub soil
 - (d) Soil organisms
4. Read the following statements with reference to soil.
 - (i) Weathering is a very fast process of soil formation.
 - (ii) Percolation of water is faster in sandy soils.
 - (iii) Loamy soil contains only sand and clay.
 - (iv) Top soil contains the maximum amount of humus.

Choose the correct statements from the above.

- | | |
|--------------------|-------------------|
| (a) (ii) and (iv) | (b) (i) and (iii) |
| (c) (ii) and (iii) | (d) (i) and (ii) |

VERY SHORT ANSWER QUESTIONS

5. Soil has particles of different sizes. Arrange the words given below in increasing order of their particle size.

Rock, Clay, Sand, Gravel, Silt

6. The components of loamy soil are _____, _____ and _____.
7. Read the following statements and give the appropriate terms for each of them.
- (a) The process of breakdown of rocks by the action of wind, water, sunlight.
 - (b) Removal of top soil during heavy rains or strong winds.
 - (c) Accumulation of wastes in the soil generated by human activity which alter the features of soil.
 - (d) The process of movement of water into deeper layers of soil.
8. Unscramble the following jumbled words related to soil.
- (a) S U H U M
 - (b) I L O S F I P R O L E
 - (c) Z O I N O R H
 - (d) M O A L
 - (e) G I N R H E T W E A
 - (f) A T O N I E R P C L

SHORT ANSWER QUESTIONS

9. Which of the following situations – 'A' or 'B' – is advantageous for absorption of water and minerals? Why?
- Situation 'A' : Growth and branching of roots in the C-horizon.
- Situation 'B' : Growth and branching of roots in A and B-horizons.
10. How can a farmer convert acidic soil to neutral soil?

11. Is it a good practice to remove grass and small plants that are growing in an open, unused field? Give reason to support your answer.
12. A man digging a pit found that he could dig with ease initially but digging became difficult as he went deeper. He could not dig beyond a depth of 5 feet. Provide a suitable scientific explanation.
13. Locate the following zones given as boxed items in Figure 9.1 which shows a diagram of soil profile.

Top soil, Subsoil, C-horizon, Bedrock



Fig. 9.1

14. Rajasthan is a desert state in India. Once while travelling to Rajasthan by train, Boojho observed several streams and rivulets of rain water during the journey but to his surprise he did not see streams of water in the desert region even during rains. Help Boojho find a suitable explanation for this.

15. Match the animals in **Column I** with their natural place of dwelling (habitat) in **Column II**.

| Column I | Column II |
|----------------------|---------------------------------------|
| (a) Earthworm | (i) sand and beaches |
| (b) Garden lizard | (ii) burrows in soil |
| (c) Crab | (iii) deep, narrow holes in dry soils |
| (d) Rodents | (iv) surface of soil |
| (e) Scorpion | (v) surface of shaded moist soils |
| (f) Snails and slugs | (vi) a horizon of moist soils. |

LONG ANSWER QUESTIONS

16. Continuously water-logged soils are disadvantageous for plant growth. Why?
17. Why is soil erosion relatively less in dense forests as compared to barren, open fields?
18. Gardeners gently dig up the soil around the roots of garden herbs (plants) frequently. Give reasons.
19. In towns and cities, generally, the bore wells have to be dug very deep to get water as compared to bore wells dug in villages. Give suitable reasons.
20. Several terms related to soil are hidden in the squares given as Figure 9.2. Spot them and make a list. Two examples are given for you.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| G | R | P | E | L | I | F | O | R | P |
| W | H | U | M | U | S | S | G | M | E |
| E | A | B | S | R | G | A | I | G | R |
| A | E | T | C | G | V | N | K | N | C |
| T | R | H | E | G | E | D | Z | C | O |
| H | O | E | D | R | O | C | K | S | L |
| E | S | P | A | A | A | K | P | C | A |
| R | I | L | D | V | R | S | I | L | T |
| I | O | A | K | E | G | Q | M | A | I |
| N | N | N | T | L | S | G | H | Y | O |
| G | K | T | H | O | R | I | Z | O | N |

Fig. 9.2

10

Respiration in Organisms

MULTIPLE CHOICE QUESTIONS

1. Sometimes when we do heavy exercise, anaerobic respiration takes place in our muscle cells. What is produced during this process?
 - (a) alcohol and lactic acid
 - (b) alcohol and CO_2
 - (c) lactic acid and CO_2
 - (d) lactic acid only
2. Yeast is used in wine and beer industries because it respire
 - (a) aerobically producing oxygen.
 - (b) aerobically producing alcohol.
 - (c) anaerobically producing alcohol.
 - (d) anaerobically producing CO_2 .
3. During the process of exhalation, the ribs move
 - (a) down and inwards.
 - (b) up and inwards.
 - (c) down and outwards.
 - (d) up and outward.
4. Breathing is a process that
 - (i) provides O_2 to the body.
 - (ii) breaks down food to release energy.
 - (iii) helps the body to get rid of CO_2 .
 - (iv) produces water in the cells.

Which of the following gives the correct combination of functions of breathing?

- | | |
|-------------------|--------------------|
| (a) (i) and (ii) | (b) (ii) and (iii) |
| (c) (i) and (iii) | (d) (ii) and (iv) |
5. Fish breathe with the help of gills which are richly supplied with blood vessels. The gills help the fish to
 - (a) take in oxygen from air.

- (b) take in oxygen dissolved in water.
 - (c) absorb nutrients present in water.
 - (d) release waste substances in water.
6. Earthworms and frogs breathe through their skin because of which the skin of both the organisms is
- (a) moist and rough.
 - (b) dry and rough.
 - (c) dry and slimy.
 - (d) moist and slimy.

VERY SHORT ANSWER QUESTIONS

7. Mark the following statements as True or False. Correct the false statements.
- (a) Oxygen breaks down glucose outside the cells of organisms.
 - (b) Frogs can breathe through their skin as well as lungs.
 - (c) Insects have spiracles on the lower surface of the body.
 - (d) Exhaled air has more percentage of CO_2 than inhaled air.
8. Fill in the blanks with suitable words.
- (a) The roots of a plant take up oxygen from the _____ trapped between the _____ particles.
 - (b) Diaphragm forms the _____ of the chest cavity.
 - (c) Exchange of gases in the leaves take place with the help of _____.
 - (d) Cockroaches breathe with the help of air tubes called _____.

SHORT ANSWER QUESTIONS

9. Pick the odd-one-out from each of the groups given below on the basis of respiratory organs. Give reason for your answer.
- (a) cockroach, grasshopper, snail, ant
 - (b) lizard, cow, earthworm, snake
 - (c) crocodile, whale, dolphin, fish
 - (d) snake, tadpole, crow, goat

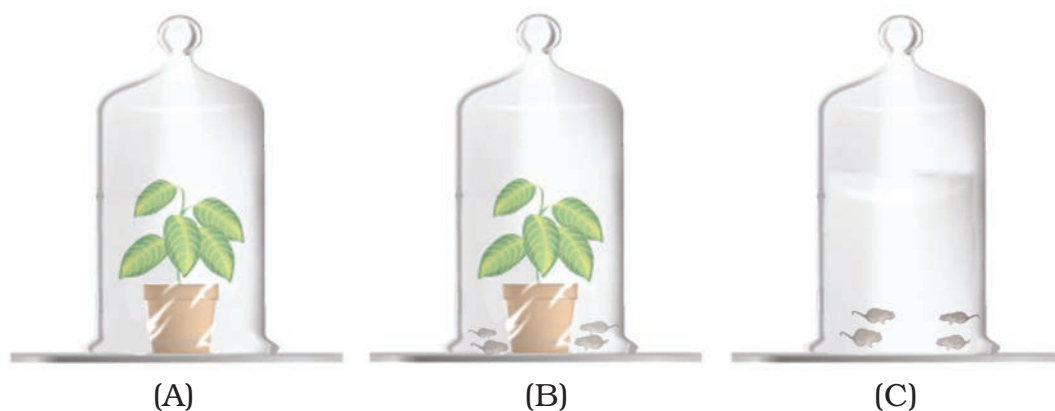
10. Which gas present in air is essential for aerobic respiration? What is the role of oxygen during respiration?
11. On an average, an adult human being at rest breathes 15–18 times per minute. The breathing rate, however, may differ under different conditions. Arrange the following activities given in the box in order of increasing breathing rates and give reason for your answer.

sleeping, cycling, brisk walk, watching T.V.

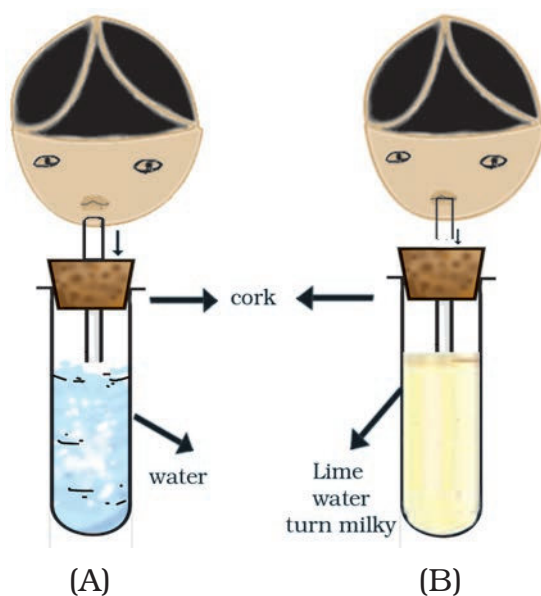
12. On a very cold morning, Boojho and Paheli were talking with each other as they walked down to their school. They observed that the air coming out of their mouth looked like smoke. They were amused and wondered how it happened. Help them find the answer.
13. Whenever we feel drowsy or sleepy, we start yawning. Does yawning help us in anyway?
14. Insects and leaves of a plant have pores through which they exchange gases with the atmosphere. Can you write two points of differences between these pores with respect to their position, number and extension into the body.

LONG ANSWER QUESTIONS

15. Paheli participated in a 400 m race competition held at her school and won the race. When she came home she had mixed feelings of joy and pain as she had cramps in her leg muscles. After a massage she was relieved of the pain. Answer the following questions related to the situation.
 - (a) What can be the possible reasons for the pain in her legs?
 - (b) Why did she feel comfortable after a massage?
16. Observe Figure 10.1 carefully and answer the following questions.

**Fig. 10.1**

- (a) In which jar, will the amount of CO_2 be the highest and why?
- (b) In which jar, will the amount of CO_2 be the lowest and why?
17. Observe Figure 10.2 carefully and answer the following questions.

**Fig. 10.2**

- (a) Which process is being tested in the activity?
- (b) What is the result of the activity? Give reasons.

18. A food stall owner was preparing dough for making *bhaturas*. He added a pinch of yeast and sugar to the dough and left it in a warm place. After few hours, the dough had risen. There was a sour smell too.
- Why did the dough rise?
 - Why did the dough smell sour?
 - Why was sugar added to the dough?
 - What would have happened if the dough was kept in the refrigerator, soon after it was prepared?
19. Observe the figures given as Figure 10.3 (A) and (B) and answer the following.
- Which of the figures A or B indicates the process of inhalation and which the process of exhalation?
 - In the figure label the arrows and indicate the direction of
 - movement of air
 - movement of diaphragm
 - movement of ribs

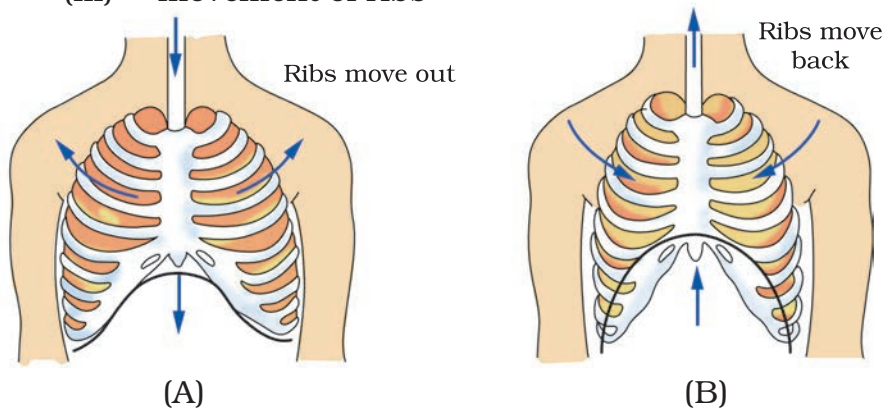


Fig. 10.3

20. Match the names of organisms in **Column I** with their organs of breathing given in **Column II**.

| Column I | Column II |
|----------------|-----------------|
| (a) Butterfly | (i) lungs |
| (b) Earthworms | (ii) gills |
| (c) Sparrow | (iii) spiracles |
| (d) Fish | (iv) skin |

11

Transportation in Animals and Plants

MULTIPLE CHOICE QUESTIONS

1. The muscular tube through which stored urine is passed out of the body is called –
 - (a) kidney
 - (b) ureter
 - (c) urethra
 - (d) urinary bladder
2. They are pipe-like, consisting of a group of specialised cells. They transport substances and form a two-way traffic in plants. Which of the following terms qualify for the features mentioned above?
 - (a) Xylem tissue
 - (b) Vascular tissue
 - (c) Root hairs
 - (d) Phloem tissue
3. The absorption of nutrients and exchange of respiratory gases between blood and tissues takes place in –
 - (a) veins
 - (b) arteries
 - (c) heart
 - (d) capillaries
4. In which of the following parts of human body are sweat glands absent?
 - (a) Scalp
 - (b) Armpits
 - (c) Lips
 - (d) Palms

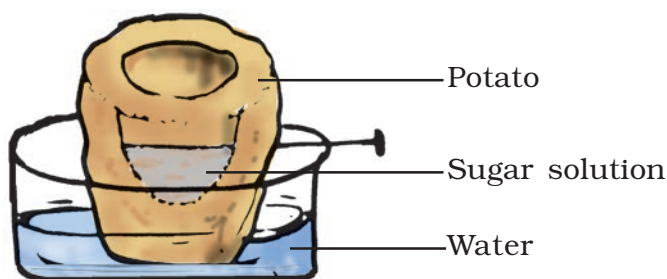
5. In a tall tree, which force is responsible for pulling water and minerals from the soil?
- (a) Gravitational force
 - (b) Transportation force
 - (c) Suction force
 - (d) Conduction force
6. Aquatic animals like fish excrete their wastes in gaseous form as
- (a) Oxygen
 - (b) Hydrogen
 - (c) Ammonia
 - (d) Nitrogen

VERY SHORT ANSWER QUESTIONS

7. Veins have valves which allow blood to flow only in one direction. Arteries do not have valves. Yet the blood flows in one direction only. Can you explain why?
8. What is the special feature present in a human heart which does not allow mixing of blood when oxygen-rich and carbon dioxide-rich blood reach the heart?
9. Name the organ which is located in the chest cavity with its lower tip slightly tilted towards the left.

SHORT ANSWER QUESTIONS

10. Look at Figure 11.1. Draw another figure of the same set-up as would be observed after a few hours.



11. Arrange the following statements in the correct order in which they occur during the formation and removal of urine in human beings.
- (a) Ureters carry urine to the urinary bladder.
 - (b) Wastes dissolved in water is filtered out as urine in the kidneys.
 - (c) Urine stored in urinary bladder is passed out through the urinary opening at the end of the urethra.
 - (d) Blood containing useful and harmful substances reaches the kidneys for filtration.
 - (e) Useful substances are absorbed back into the blood.
12. Paheli uprooted a rose plant from the soil. Most of the root tips, with root hairs got left behind in the soil. She planted it in a pot with new soil and watered it regularly. Will the plant grow or die? Give reason for your answer.
13. (a) Name the only artery that carries carbon dioxide-rich blood.
- (b) Why is it called an artery if it does not carry oxygen-rich blood?
14. Boojho's uncle was hospitalised and put on dialysis after a severe infection in both of his kidneys.
- (a) What is dialysis?
 - (b) When does it become necessary to take such a treatment?
15. Name the process and the organ which helps in removing the following wastes from the body.
- (a) Carbondioxide
 - (b) Undigested food
 - (c) Urine
 - (d) Sweat

16. Observe Figure 11.2 and answer the given questions:

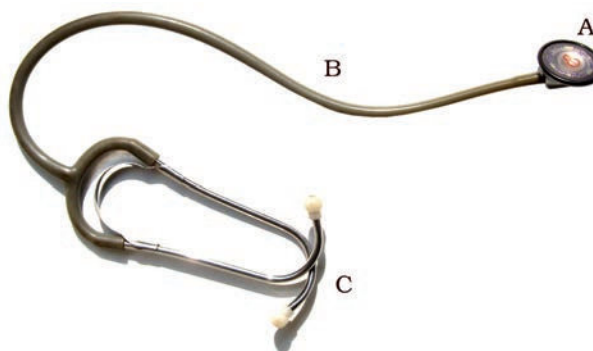


Fig 11.2

- (a) Name the instrument.
(b) Label the parts A, B and C.
17. Paheli noticed water being pulled up by a motor-pump to an overhead tank of a five-storeyed building. She wondered how water moves up to great heights in the tall trees standing next to the building. Can you tell why?

LONG ANSWER QUESTIONS

18. Match the parts of the heart in **Column I** with the direction of flow of blood in **Column II**.

| Column I | Column II |
|-------------------------|---|
| (i) Right ventricle | (a) Pushes blood into the pulmonary artery. |
| (ii) Pulmonary veins | (b) Take deoxygenated blood from the heart to lungs. |
| (iii) Left atrium | (c) Receives blood from different parts of the body. |
| (iv) Pulmonary arteries | (d) Bring oxygenated blood from lungs to the heart. |
| (v) Left ventricle | (e) Pushes blood into the aorta. |
| (vi) Right auricle | (f) Receives deoxygenated blood from the pulmonary veins. |

19. Read the following terms given below.

| | | |
|------------|-------------|-----------------|
| root hairs | xylem | urethra |
| arteries | kidneys | veins |
| atria | capillaries | heart |
| ureter | phloem | urinary bladder |

Group the terms on the basis of the categories given below.

- (a) Circulatory system of animals.
 - (b) Excretory system in human.
 - (c) Transport of substances in plants.
20. Fill in the blanks of the following paragraph using just two words – arteries and veins.
- ____(a)____ carry oxygen-rich blood from the heart to all parts of the body and ____ (b) ____ carry carbon dioxide-rich blood from all parts of the body back to the heart. ____ (c) ____ have thin walls and ____ (d) ____ have thick elastic walls. Blood flows at high pressure in ____ (e) _____. Valves are present in ____ (f) ____ which allow blood to flow only towards the heart. ____ (g) ____ divide into smaller vessels. These vessels further divide into extremely thin tubes called capillaries. The capillaries join up to form ____ (h) _____.
21. While learning to ride a bicycle Boojho lost his balance and fell. He got bruises on his knees and it started bleeding. However, the bleeding stopped after some time.
- (a) Why did the bleeding stop?
 - (b) What would be the colour of the wounded area and why?
 - (c) Which type of blood cells are responsible for clotting of blood?

12

Reproduction in Plants

MULTIPLE CHOICE QUESTIONS

1. Which of the following parts of a plant take part in sexual reproduction?
- (i) Flower
 - (ii) Seed
 - (iii) Fruit
 - (iv) Branch

Choose the correct answer from below.

- (a) (i) and (ii)
 - (b) (i), (ii) and (iii)
 - (c) (iii) and (iv)
 - (d) (ii), (iii) and (iv)
2. Lila observed that a pond with clear water was covered up with a green algae within a week. By which method of reproduction did the algae spread so rapidly?
- (a) Budding
 - (b) Sexual reproduction
 - (c) Fragmentation
 - (d) Pollination
3. Seeds of drumstick and maple are carried to long distances by wind because they possess
- (a) winged seeds
 - (b) large and hairy seeds
 - (c) long and ridged fruits
 - (d) spiny seeds
4. The 'eye' of the potato plant is what
- (a) the root is to any plant.
 - (b) the bud is to a flower.
 - (c) the bud is to *Bryophyllum* leaf.
 - (d) the anther is to stamen.

5. The ovaries of different flowers may contain
- (a) only one ovule
 - (b) many ovules
 - (c) one to many ovules
 - (d) only two ovules
6. Which of the following statements is/are true for sexual reproduction in plants?
- (i) Plants are obtained from seeds.
 - (ii) Two plants are always essential.
 - (iii) Fertilisation can occur only after pollination.
 - (iv) Only insects are agents of pollination.

Choose from the options given below.

- (a) (i) and (iii)
 - (b) (i) only
 - (c) (ii) and (iii)
 - (d) (i) and (iv)
7. Pollination refers to the
- (a) transfer of pollen from anther to ovary.
 - (b) transfer of male gametes from anther to stigma.
 - (c) transfer of pollen from anther to stigma.
 - (d) transfer of pollen from anther to ovule.

VERY SHORT ANSWER QUESTIONS

8. Fungus, moss and fern reproduce by a common method of asexual reproduction. Name the method.
9. Pick the odd one out from the following on the basis of mode of reproduction and give reason for it.

Sugarcane, Potato, Rice, Rose

10. Boojho had the following parts of a rose plant – a leaf, roots, a branch, a flower, a bud and pollen grains. Which of them can be used to grow a new rose plant?

11. Which type of pollination does the Figure 12.1 indicate?

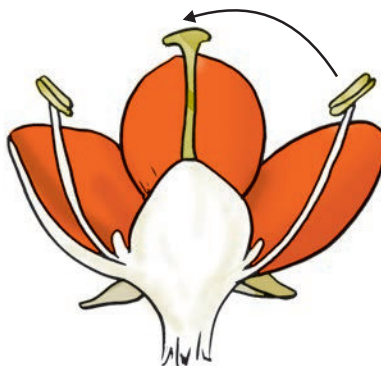


Fig. 12.1

12. One morning as Paheli strolled in her garden she noticed many small plants which were not there a week ago. She wondered where they had come from as nobody had planted them there. Explain the reason for the growth of these plants.

SHORT ANSWER QUESTIONS

13. In the diagram given in Figure 12.2 label the parts marked (a), (b) and (c).

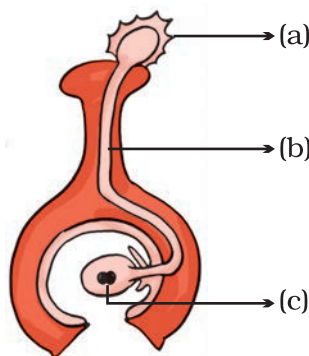


Fig. 12.2

14. When you keep food items like bread and fruits outside for a long time especially during the rainy season, you will observe a cottony growth on them.
- What is this growth called?
 - How does the growth take place?

15. Group the seeds given in Figure 12.3 (i) to (iii) according to their means of dispersion.
- (a) Seed dispersed by wind
 - (b) Seed dispersed by water
 - (c) Seed dispersed by animal

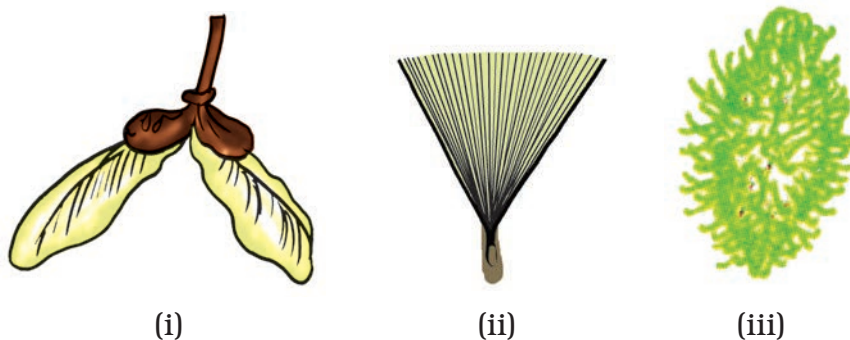


Fig. 12.3

16. Coconut is a large and heavy fruit. How is it adapted for dispersal by water?

LONG ANSWER QUESTIONS

17. In the figure of a flower given in Figure 12.4, label the parts whose functions are given below and give their names.
- (a) The part which contains pollen grains.
 - (b) The part where the female gamete is formed.
 - (c) The female reproductive part where pollen grains germinate.
 - (d) The colourful part of flower which attracts insects.



Fig 12.4

18. Fill in the blanks with correct terms.

The male and female gametes fuse to form a ____ (a) ____ during the process of ____ (b) ____ . This grows into an ____ (c) ____ which is enclosed within a seed. After fertilisation the ovules develop into ____ (d) ____ and the ovary develops into a ____ (e) ____ .

19. In the diagram of a bisexual flower given as Figure 12.5, draw the missing part and label the parts marked (a), (b) and (c). Also label the missing part that you draw.

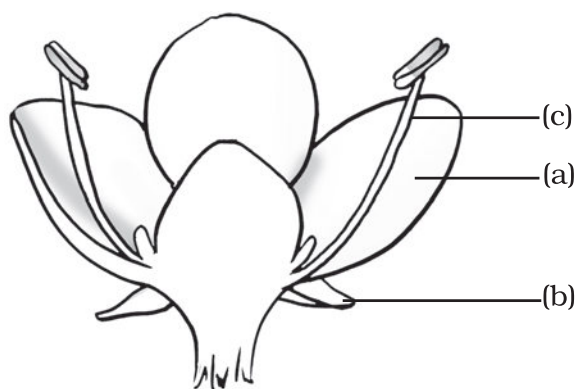


Fig. 12.5

20. Write how the following seeds are dispersed.
- (a) Seeds with wings.
 - (b) Small and light seeds.
 - (c) Seeds with spines/hooks.

13

Motion and Time

MULTIPLE CHOICE QUESTIONS

- Which of the following cannot be used for measurement of time?
 - A leaking tap.
 - Simple pendulum.
 - Shadow of an object during the day.
 - Blinking of eyes.
- Two clocks A and B are shown in Figure 13.1. Clock A has an hour and a minute hand, whereas clock B has an hour hand, minute hand as well as a second hand. Which of the following statement is correct for these clocks?

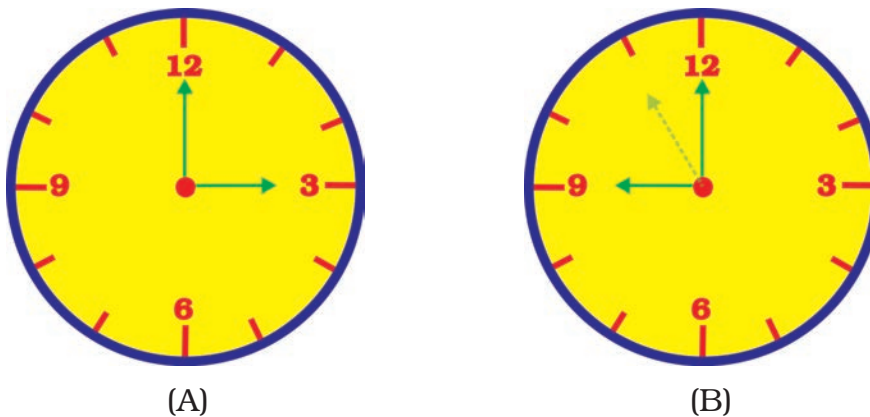


Fig 13.1

- A time interval of 30 seconds can be measured by clock A.
- A time interval of 30 seconds cannot be measured by clock B.
- Time interval of 5 minutes can be measured by both A and B.
- Time interval of 4 minutes 10 seconds can be measured by clock A.

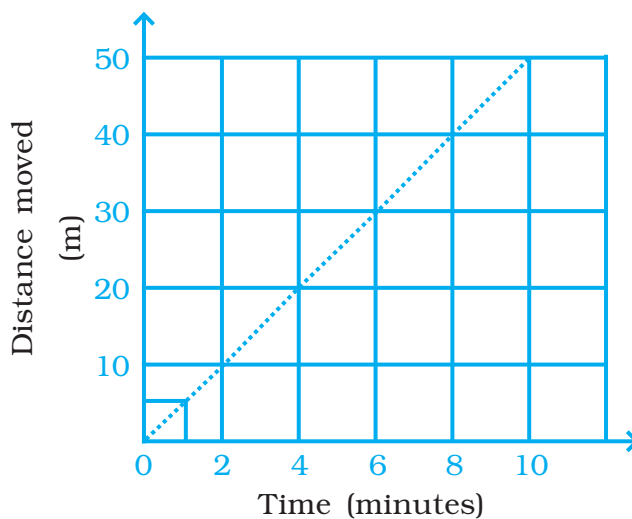
3. Two students were asked to plot a distance-time graph for the motion described by Table A and Table B.

Table A

| | | | | | | |
|--------------------|---|----|----|----|----|----|
| Distance moved (m) | 0 | 10 | 20 | 30 | 40 | 50 |
| Time (minutes) | 0 | 2 | 4 | 6 | 8 | 10 |

Table B

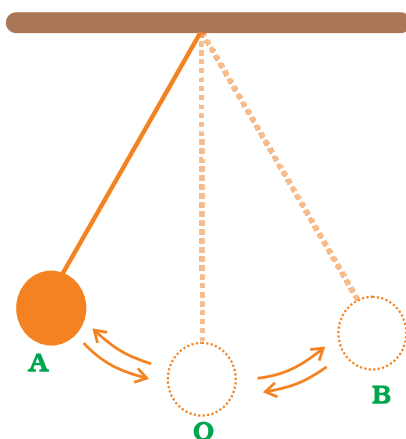
| | | | | | | |
|--------------------|---|---|----|----|----|----|
| Distance moved (m) | 0 | 5 | 10 | 15 | 20 | 25 |
| Time (minutes) | 0 | 1 | 2 | 3 | 4 | 5 |

**Fig 13.2**

The graph given in Figure 13.2 is true for

- (a) both A and B.
- (b) A only.
- (c) B only.
- (d) neither A nor B.

4. A bus travels 54 km in 90 minutes. The speed of the bus is
 (a) 0.6 m/s
 (b) 10 m/s
 (c) 5.4 m/s
 (d) 3.6 m/s
5. If we denote speed by S, distance by D and time by T, the relationship between these quantities is
 (a) $S = D \times T$
 (b) $T = \frac{S}{D}$
 (c) $S =$
 (d) $S =$
6. Observe Figure 13.3.

**Fig 13.3**

The time period of a simple pendulum is the time taken by it to travel from

- (a) A to B and back to A.
 (b) O to A, A to B and B to A.
 (c) B to A, A to B and B to O.
 (d) A to B.

7. Fig. 13.4 shows an oscillating pendulum.

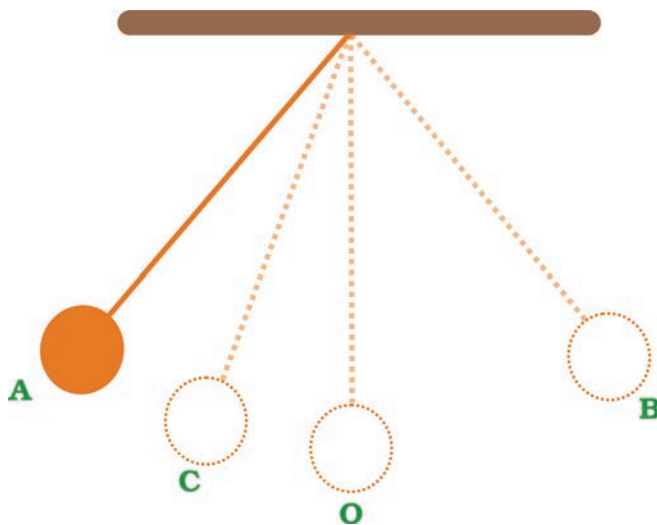


Fig. 13.4

Time taken by the bob to move from A to C is t_1 and from C to O is t_2 . The time period of this simple pendulum is

- (a) $(t_1 + t_2)$
 - (b) $2(t_1 + t_2)$
 - (c) $3(t_1 + t_2)$
 - (d) $4(t_1 + t_2)$
8. The correct symbol to represent the speed of an object is
- (a) 5 m/s
 - (b) 5 mp
 - (c) 5 m/s⁻¹
 - (d) 5 s/m
9. Boojho walks to his school which is at a distance of 3 km from his home in 30 minutes. On reaching he finds that the school is closed and comes back by a bicycle with his friend and reaches home in 20 minutes. His average speed in km/h is
- (a) 8.3
 - (b) 7.2
 - (c) 5
 - (d) 3.6

VERY SHORT ANSWER QUESTIONS

10. A simple pendulum is oscillating between two points A and B as shown in Figure 13.5. Is the motion of the bob uniform or non-uniform?

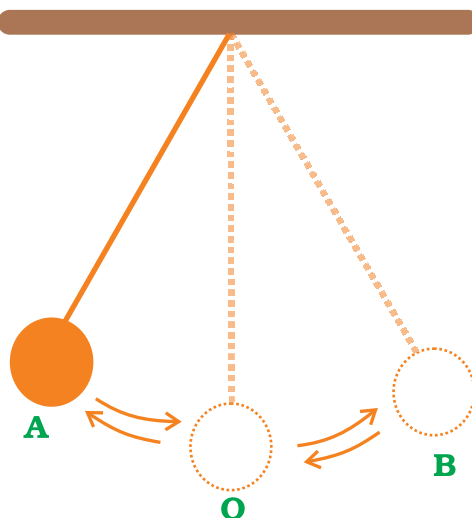


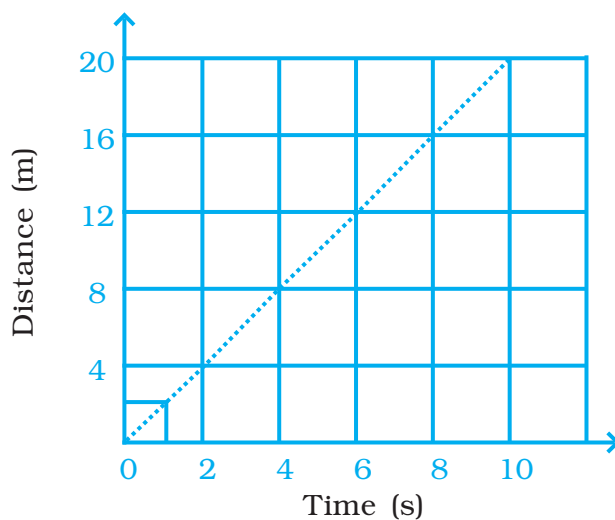
Fig. 13.5

11. Paheli and Boojho have to cover different distances to reach their school but they take the same time to reach the school. What can you say about their speed?
12. If Boojho covers a certain distance in one hour and Paheli covers the same distance in two hours, who travels in a higher speed?

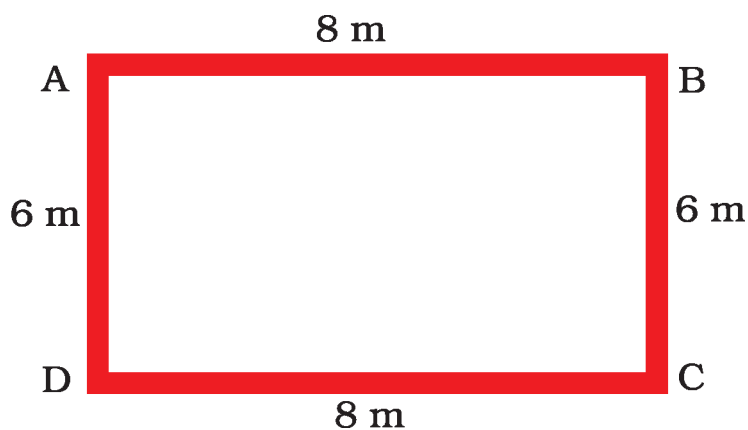
SHORT ANSWER QUESTIONS

13. Complete the data of the table given below with the help of the distance-time graph given in Figure 13.6.

| | | | | | | |
|--------------|---|---|---|----|---|----|
| Distance (m) | 0 | 4 | ? | 12 | ? | 20 |
| Time (s) | 0 | 2 | 4 | ? | 8 | 10 |

**Fig. 13.6**

14. The average age of children of Class VII is 12 years and 3 months. Express this age in seconds.
15. A spaceship travels 36,000 km in one hour. Express its speed in km/s.
16. Starting from A, Paheli moves along a rectangular path ABCD as shown in Figure 13.7. She takes 2 minutes to travel each side. Plot a distance-time graph and explain whether the motion is uniform or non-uniform.

**Fig 13.7**

17. Plot a distance-time graph of the tip of the second hand of a clock by selecting 4 points on x -axis and y -axis respectively. The circumference of the circle traced by the second hand is 64 cm.

LONG ANSWER QUESTIONS

18. Given below as Figure 13.8 is the distance-time graph of the motion an object.

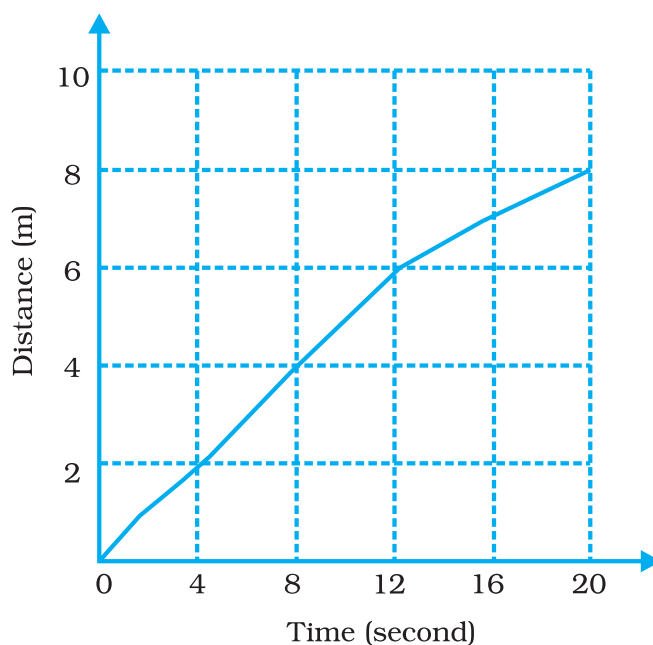


Fig. 13.8

- (i) What will be the position of the object at 20s?
 - (ii) What will be the distance travelled by the object in 12s?
 - (iii) What is the average speed of the object?
19. Distance between Bholu's and Golu's house is 9 km. Bholu has to attend Golu's birthday party at 7 o'clock. He started from his home at 6 o'clock on his bicycle and covered a distance of 6 km in 40 minutes. At that point he met Chintu and he spoke to him for 5 minutes and reached Golu's birthday party at 7 o'clock. With what speed did he cover the second part of the journey? Calculate his average speed for the entire journey.

20. Boojho goes to the football ground to play football. The distance-time graph of his journey from his home to the ground is given as Figure 13.9.

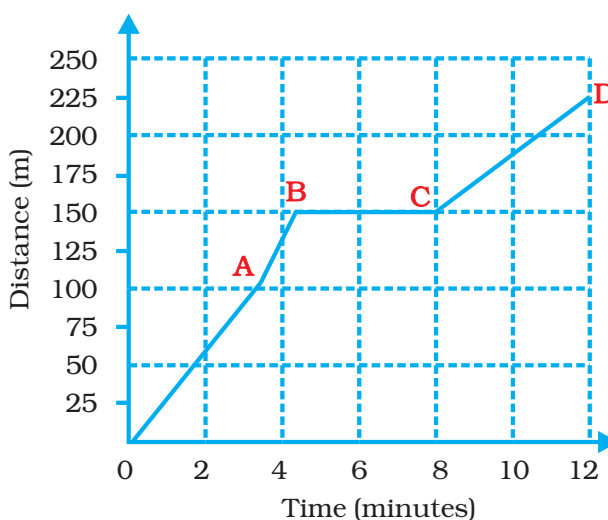


Fig. 13.9

- (a) What does the graph between point B and C indicate about the motion of Boojho?
- (b) Is the motion between 0 to 4 minutes uniform or non-uniform?
- (c) What is his speed between 8 and 12 minutes of his journey?

14

Electric Current and Its Effects

MULTIPLE CHOICE QUESTIONS

1. When an electric current flows through a copper wire AB as shown in Figure 14.1, the wire

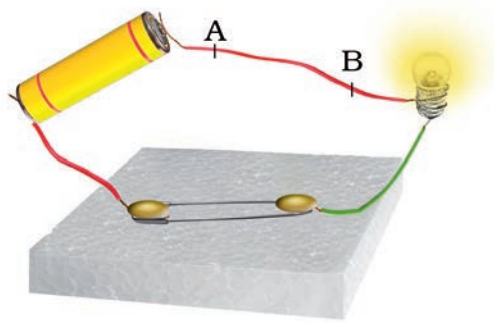


Fig. 14.1

- (a) deflects a magnetic needle placed near it.
 - (b) becomes red hot.
 - (c) gives electric shock.
 - (d) behaves like a fuse.
2. Choose the statement which is not correct in the case of an electric fuse.
- (a) Fuses are inserted in electric circuits of all buildings.
 - (b) There is a maximum limit on the current which can safely flow through the electric circuits.
 - (c) There is a minimum limit on the current which can safely flow in the electric circuits.
 - (d) If a proper fuse is inserted in a circuit it will blow off if current exceeds the safe limit.

3. Three bulbs A, B, C are connected in a circuit as shown in Figure 14.2. When the switch is 'ON'
- (a) bulb C will glow first.
 - (b) bulb B and C will glow simultaneously and bulb A will glow after some time.
 - (c) all the bulbs A, B and C will glow at the same time.
 - (d) the bulbs will glow in the order A, B and C.

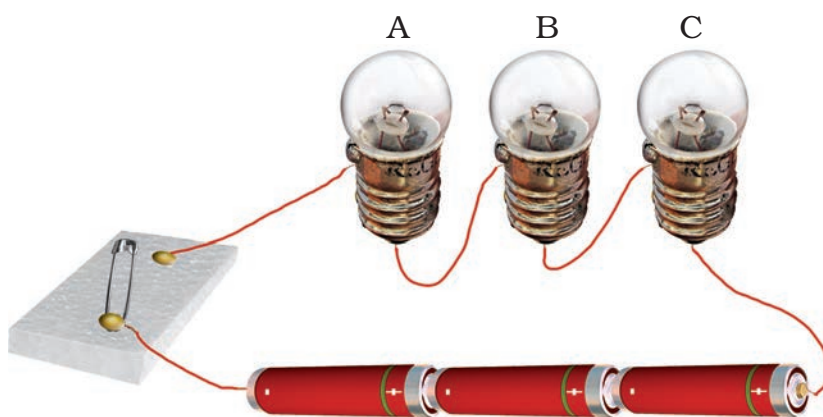


Fig. 14.2

4. When a switch is in OFF position,
- (i) circuit starting from the positive terminal of the cell stops at the switch.
 - (ii) circuit is open.
 - (iii) no current flows through it.
 - (iv) current flows after some time.

Choose the combination of correct answer from the following.

- (a) all are correct
 - (b) (ii) and (iii) are correct
 - (c) only (iv) is correct
 - (d) only (i) and (ii) are correct
5. Which of the following precautions need not be taken while using electric gadgets/appliances/circuit?
- (a) We should never touch a lighted electric bulb connected to the mains.
 - (b) We should never experiment with the electric supply from the mains or a generator or an inverter.

- (c) We should never use just any wire or strip of metal in place of a fuse.
- (d) We should never turn the switch in ON position.

VERY SHORT ANSWER QUESTIONS

6. Which property of a conducting wire is utilised in making electric fuse?
7. Name the device used these days in place of electric fuses in electrical circuits.
8. Fill in the blanks:
 - (i) Our body is a _____ of electricity.
 - (ii) An electric cell produces electricity from the _____ in it.
 - (iii) In an electric circuit a fuse is a _____ to prevent possible fire.
 - (iv) A combination of two or more cells is called a _____.
9. Unscramble the following words:
 - (i) TBTAYER
 - (ii) SFEU
 - (iii) HTRCO
 - (iv) HICWTS
10. Paheli does not have a night lamp in her room. She covered the bulb of her room with a towel in the night to get dim light. Has she taken the right step? Give one reason to justify your answer.
11. Why are compact fluorescent lamps (CFLs) preferred over electric bulbs?
12. Why is an electric fuse required in all electrical appliances?

SHORT ANSWER QUESTIONS

13. Can we use the same fuse in a geyser and a television set? Explain.

14. Name two electric devices for each where (i) heating effect of current is used and (ii) magnetic effect of current is used.
15. Why do we cover plug pin holes which are within the reach of children with cellotape or a plastic cover when not in use?
16. Boojho made an electromagnet by winding 50 turns of wire over an iron screw. Paheli also made an electromagnet by winding 100 turns over a similar iron screw. Which electro magnet will attract more pins? Give reason.

LONG ANSWER QUESTIONS

17. Your teacher has shown you the following activity.

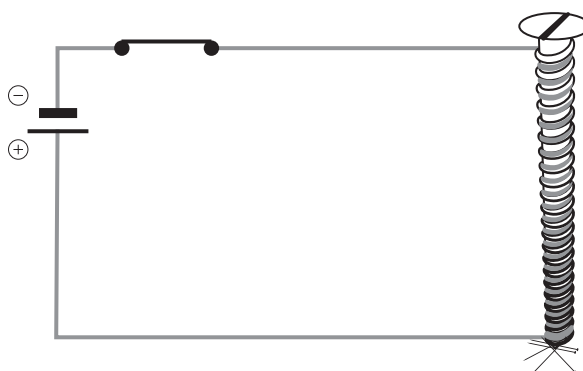


Fig. 14.3

Activity: Teacher has wound a long insulated piece of wire around an iron nail in the form of a coil. Free ends of the wire are connected to a cell through a switch as shown in the Figure 14.3. The current is switched on and some pins are placed near the ends of the nail.

Write down any three questions that come to your mind about this activity.

18. Paheli took a wire of length 10 cm. Boojho took a wire of 5 cm of the same material and thickness. Both of them connected the wires as shown in the circuit given in Figure 14.4. The current flowing in both the circuits is the same.
 - (i) Will the heat produced in both the cases be equal? Explain.

- (ii) Will the heat produced be the same if the wires taken by them are of equal lengths but of different thickness? Explain.

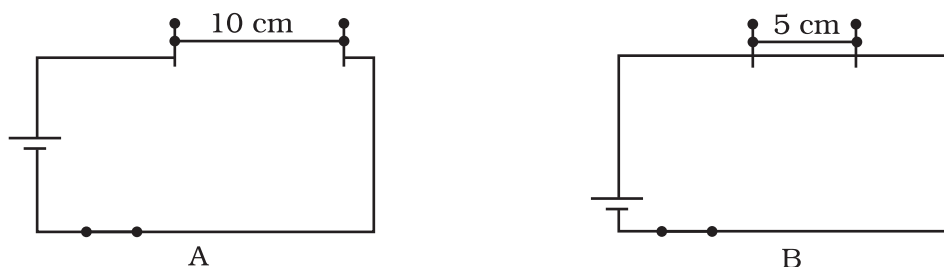


Fig. 14.4

19. How does the magnetic effect of electric current help in the working of an electric bell? Explain with the help of a diagram.
20. Draw the symbols of the following circuit components.
- (i) electric cell
 - (ii) switch in off position
 - (iii) electric bulb
 - (iv) battery

MULTIPLE CHOICE QUESTIONS

1. Boojho and Paheli were given one mirror each by their teacher. Boojho found his image to be erect and of the same size whereas Paheli found her image erect and smaller in size. This means that the mirrors of Boojho and Paheli are, respectively
 - (a) plane mirror and concave mirror.
 - (b) concave mirror and convex mirror.
 - (c) plane mirror and convex mirror.
 - (d) convex mirror and plane mirror.
2. Which of the following can be used to form a real image?
 - (a) Concave mirror only.
 - (b) Plane mirror only.
 - (c) Convex mirror only.
 - (d) Both concave and convex mirrors.
3. If an object is placed at a distance of 0.5 m in front of a plane mirror, the distance between the object and the image formed by the mirror will be
 - (a) 2 m
 - (b) 1 m
 - (c) 0.5 m
 - (d) 0.25 m
4. You are provided with a concave mirror, a convex mirror, a concave lens and a convex lens. To obtain an enlarged image of an object you can use either
 - (a) concave mirror or convex mirror.
 - (b) concave mirror or convex lens.
 - (c) concave mirror or concave lens.
 - (d) concave lens or convex lens.
5. A rainbow can be seen in the sky
 - (a) when the sun is in front of you.
 - (b) when the sun is behind you.

- (c) when the sun is overhead.
 - (d) only at the time of sun rise.
6. An erect and enlarged image can be formed by
- (a) only a convex mirror.
 - (b) only a concave mirror.
 - (c) only a plane mirror.
 - (d) both convex and concave mirrors.
7. You are provided with a convex mirror, a concave mirror, a convex lens and a concave lens. You can get an inverted image from
- (a) both concave lens and convex lens.
 - (b) both concave mirror and convex mirror.
 - (c) both concave mirror and convex lens.
 - (d) both convex mirror and concave lens.
8. An image formed by a lens is erect. Such an image could be formed by a
- (a) convex lens provided the image is smaller than object.
 - (b) concave lens provided the image is smaller than object.
 - (c) concave lens provided the image is larger than object.
 - (d) concave lens provided the image is of the same size.

VERY SHORT ANSWER QUESTIONS

9. The image formed by a lens is always virtual, erect and smaller in size for an object kept at different positions in front of it. Identify the nature of the lens.
10. Fill in the blanks:
- (a) The inner surface of a steel spoon acts as a _____ mirror.
 - (b) The outer surface of a flat steel plate acts as a _____ mirror.
 - (c) The outer shining surface of a round bottom steel bowl acts as a _____ mirror.
 - (d) The inner surface of the reflector of a torch acts as a _____ mirror.

11. State whether the following statements are True or False.
- A concave lens can be used to produce an enlarged and erect image.
 - A convex lens always produces a real image.
 - The sides of an object and its image formed by a concave mirror are always interchanged.
 - An object can be seen only if it emits light.

SHORT ANSWER QUESTIONS

12. What type of mirror is used as a side mirror in a scooter? Why is this type of mirror chosen?
13. Observe the figures given as Figure 15.1 carefully.



Fig 15.1

The given figures show the path of light through lenses of two different types, represented by rectangular boxes A and B. What is the nature of lenses A and B?

14. Boojho made light from a laser torch to fall on a prism. Will he be able to observe a band of seven colours? Explain with a reason.
15. State the correct sequence (1-7) of colours in the spectrum formed by the prisms A and B, shown in Figure 15.2.

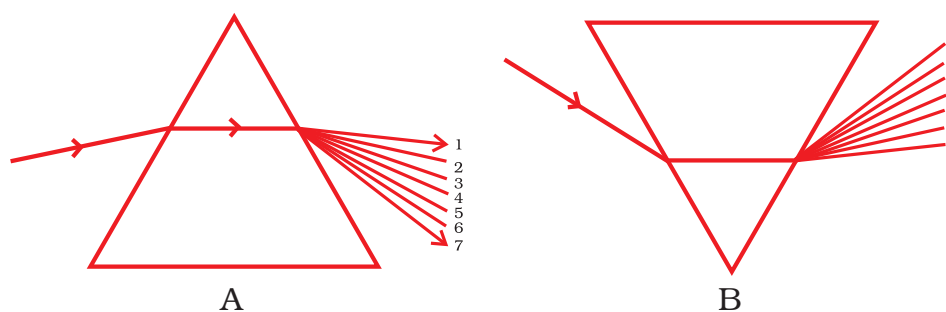


Fig 15.2

16. The side mirror of a scooter got broken. The mechanic replaced it with a plane mirror. Mention any inconvenience that the driver of the scooter will face while using it?
17. The concave reflecting surface of a torch got rusted. What effect would this have on the beam of light from the torch?
18. An erect and enlarged image of an object is formed on a screen. Explain how this could be possible.
19. Two different type of lenses are placed on a sheet of newspaper. How will you identify them without touching?
20. A shopkeeper wanted to fix a mirror which will give a maximum view of his shop. What type of mirror should he use? Give reason.
21. The distance between an object and a convex lens is changing. It is noticed that the size of the image formed on a screen is decreasing. Is the object moving in a direction towards the lens or away from it?

LONG ANSWER QUESTIONS

22. Suppose we wish to obtain the real image of a distant tree. Explain two possible ways in which we can do it.
23. It was observed that when the distance between an object and a lens decreases, the size of the image increases. What is the nature of this lens? If you keep on decreasing the distance between the object and the lens, will you still be able to obtain the image on the screen? Explain.
24. You are given three mirrors of different types. How will you identify each one of them?

16

Water : A Precious Resource

MULTIPLE CHOICE QUESTIONS

1. Which of the following does not show water shortage?
 - (a) Taps running dry.
 - (b) Long queues for getting water.
 - (c) Marches and protests for demand of water.
 - (d) A family gets three buckets of water per person per day.
2. Seas and oceans are full of water on earth. However, a very small percentage of water present on earth is available for us. This percentage is roughly
 - (a) 0.006%.
 - (b) 0.06%.
 - (c) 0.6%.
 - (d) 6%.
3. Which of the following are not the liquid forms of water?
 - (i) Snow
 - (ii) Lake water
 - (iii) River water
 - (iv) Water vapour
 - (v) Ice

Choose the correct combination from the options below.

- | | |
|-----------------------|------------------|
| (a) (i), (iv) and (v) | (b) (i) and (ii) |
| (c) (ii) and (iii) | (d) (iv) only |
4. A man digging the ground near a water body found that the soil was moist. As he kept digging deeper and deeper he reached a level where all the spaces between particles of soil and gaps between rocks were filled with water. The upper limit of this layer is called
 - (a) water level.
 - (b) water table.
 - (c) ground water.
 - (d) water limit.

5. Which of the following is a way to use water economically?
 - (a) Construction of *bawris*
 - (b) Rainwater harvesting
 - (c) Drip irrigation
 - (d) Infiltration
6. On which of the following day is World Water Day observed?
 - (a) 22 March
 - (b) 14 November
 - (c) 2 October
 - (d) 21 December
7. The amount of water recommended by the United Nations for drinking, washing, cooking and maintaining proper hygiene per person per day is a minimum of
 - (a) 5 litres
 - (b) 15 litres
 - (c) 30 litres
 - (d) 50 litres
8. “Every Drop Counts” is a slogan related to
 - (a) counting of drops of any liquid.
 - (b) counting of water drops.
 - (c) importance of water.
 - (d) importance of counting.
9. Water cycle does not involve which of the following?
 - (a) Evaporation
 - (b) Condensation
 - (c) Formation of clouds
 - (d) Rainwater harvesting
10. Which of the following inhibits the seepage of rainwater into ground?
 - (a) A pukka floor
 - (b) Playground
 - (c) Grass lawn
 - (d) Forest land

VERY SHORT ANSWER QUESTIONS

11. State whether the following statements are True or False. If false, write the correct statement.
- (a) Water vapour is the gaseous form of water.
 - (b) Ice is solid whereas snow is the semi-solid form of water.
 - (c) Ocean water cannot be used for domestic purposes.
 - (d) Rapid growth of industries is one of the causes for water shortage.
12. Some definitions are given below which can be corrected by changing one word. Correct them.
- (a) Aquifer is ground water stored between layers of hard rock above the water table.
 - (b) The process of evaporation of water in the ground is called infiltration.
 - (c) The evaporation of water from oceans and its arrival back into oceans is called vapour cycle.
13. What is the source of water in each of the following ?
- (a) Wells
 - (b) Ground
 - (c) Atmosphere
14. State whether the following statements are True or False. If false, give the correct statement.
- (a) The process of seeping of water into ground is called filtration.
 - (b) 51% of the earth's surface is covered with water.
 - (c) Year 2003 was observed as the International Year of Freshwater.
 - (d) Snow and ice both are solid forms of water.

SHORT ANSWER QUESTIONS

15. Fill in the blanks in the given passage.

The rainwater and _____ from other sources such as rivers and ponds seeps through the _____ and fills the empty spaces and cracks deep below the ground. The process of seeping of water into the ground is called _____.

16. Fill in the blanks and complete the story selecting words from the box given here.

cold, demand, leaders, dry, hot, scarcity, workers,
wet, oceans, harvesting, rivers

- Rajasthan is a _____ and dry place. The challenge of natural _____ of water was met by a successful experiment. A band of social _____ had transformed a _____ area into a green place. They have revived five dried-up _____ by constructing water _____ structures.
17. Place the following statements in a proper order to form a meaningful paragraph.
- (a) Which in turn decreases the seepage of rain water into the ground.
 - (b) This decreases the open areas like park, and playgrounds.
 - (c) Increasing population create demand for construction of houses, shops, offices, roads and pavements.
 - (d) This results in depletion of water table and creates scarcity of more water.
18. How can you observe the three forms of water in (i) nature and (ii) at home?
19. Complete the given table

| Form of Water | Process by which formed | Location where found |
|---------------|-------------------------|----------------------|
| (a) Liquid | | |
| (b) Solid | | |
| (c) Gaseous | | |

20. Match **Column I** with **Column II**

| Column I | Column II |
|---------------------|-------------------------|
| (a) ground water | (i) solid form of water |
| (b) <i>bawri</i> | (ii) wastage of water |
| (c) snow | (iii) water management |
| (d) drip irrigation | (iv) small water |
| (e) leaking taps | (v) water table |

21. A list of jumbled words are given here. Write the correct form of each word.

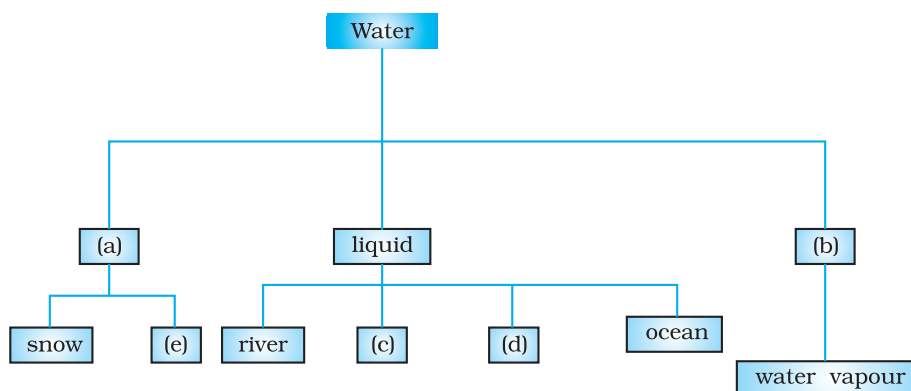
(a) WASHFERRET (b) CHARREGE (c) QUIFERA (d) WOSN

22. From where do the following usually get water? In which form is water present in them?

- | | |
|-------------------|-------------|
| (a) Clouds | (b) Plants |
| (c) Mountain tops | (d) Aquifer |
| (e) Animals | |

LONG ANSWER QUESTIONS

23. Complete the following chart by writing appropriate words in the boxes marked (a) to (e).



24. What is ground water? What are the sources of water which are fed by ground water?

25. Water is very precious for all the living beings. What will happen in future if we do not save water now?

17

Forests : Our Lifeline

MULTIPLE CHOICE QUESTIONS

1. Which of the following serve as green lungs?
 - (a) Green pigment of the plants
 - (b) Forests
 - (c) Kitchen gardens
 - (d) Green house gases
2. Boojho visited a forest near his town with his classmates and his teacher. As they were entering the forest, their class teacher told them not to make noise in the forest as noise could disturb the
 - (a) birds
 - (b) animals
 - (c) both birds and animals
 - (d) plants
3. Which among the following forest animals is the smallest?
 - (a) Fox
 - (b) Boar
 - (c) Bison
 - (d) Porcupine
4. Which of the following has the strongest stem?
 - (a) A tree
 - (b) A creeper
 - (c) A climber
 - (d) A bush
5. Which of the following is not prepared from the wood obtained from forest?
 - (a) Paper
 - (b) Thermocol
 - (c) Matchsticks
 - (d) Plywood

6. Which of the following is not the name of a tree?
 - (a) Teak
 - (b) Sal
 - (c) Porcupine
 - (d) Kachnar
7. Pick the option which gives the names of a tree and an animal, respectively from the following.
 - (a) semal, hornbill
 - (b) sal, khair
 - (c) chinkara, blue bull
 - (d) neem, palash
8. Which of the products is not obtained from a forest?
 - (a) Honey
 - (b) Catechu
 - (c) Gum
 - (d) Ginger
9. The branchy part of a tree above the stem is known as
 - (a) crown
 - (b) canopy
 - (c) sapling
 - (d) humus
10. Forests are not responsible for
 - (a) providing medicinal plants.
 - (b) maintaining the flow of water into the streams.
 - (c) creating flood conditions.
 - (d) absorbing rainwater and maintaining water table.

VERY SHORT ANSWER QUESTIONS

11. Paheli while moving in a forest observed that there was no noise pollution, though lots of heavy vehicles were passing from the nearby highway. Explain why?
12. State whether the following statements are true or false. If false, give the correct statement.
 - (a) Forests influence climate, water cycle and air quality.
 - (b) In a forest, trees form the uppermost layer, followed by herbs. The shrubs form the lowest layer of vegetation.

- (c) The forest keeps on growing and changing and can regenerate.
 - (d) Forests protect the soil from erosion.
13. Paheli wrote a food chain in the following way:
- frog → eagle → insects → grass → snake

The chain is not in the correct order. Help her to write the food chain correctly.

SHORT ANSWER QUESTIONS

14. Give names of any four birds which you expect to see in a forest.
15. Two friends shared their experiences of their vacation trip to two different forests. Do you think they would have seen the same type of plants and animals during their respective trips? Give reason.
16. “A bunch of seedlings were seen sprouting on a heap of animal dropping in a forest.” How do you think is the seedling benefited from the animal dung?
17. Match **Column I** with **Column II**

| Column I | Column II |
|-----------------|-----------------------------------|
| (a) Decomposers | (i) dead plant and animal tissues |
| (b) Canopy | (ii) habitats for wild life |
| (c) Porcupine | (iii) micro-organisms |
| (d) Humus | (iv) wild animal |
| (e) Forest | (v) branches of tall trees. |

18. Deforestation may lead to floods. Why?
19. Name any four useful products other than wood, which we get from forests.

LONG ANSWER QUESTIONS

20. Figure 17.1 shows a part of a forest.

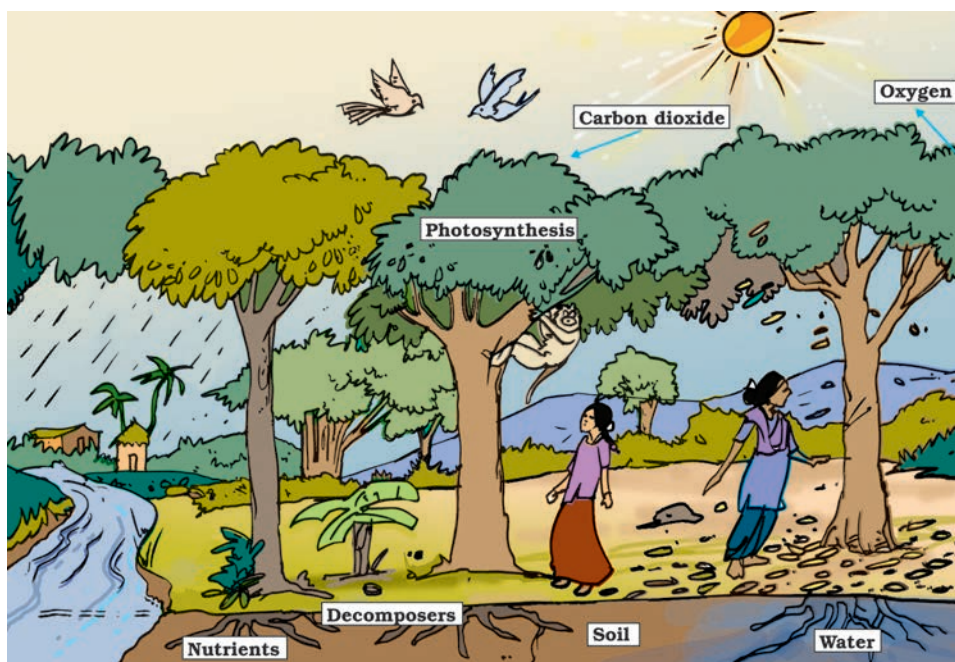


Fig. 17.1

Write any three activities going on in the forest on the basis of this figure.

21. People say that nothing goes waste in a forest. Can you explain, how?
22. Give any four factors which are responsible for the destruction of forests.
23. Draw a figure showing two animals, two birds and a few trees as a part of a forest.
24. All the needs of animals living in a forest are fulfilled. Justify this statement in a few sentences.
25. "Forests are our lifeline." Write five sentences on this topic.

18

Wastewater Story

MULTIPLE CHOICE QUESTIONS

1. Which of the following is waste water?
 - (a) Water trickling from a damaged tap.
 - (b) Water coming out of a shower.
 - (c) Water flowing in a river.
 - (d) Water coming out of a laundry.
2. Sewage is mainly a
 - (a) liquid waste.
 - (b) solid waste.
 - (c) gaseous waste.
 - (d) mixture of solid and gas.
3. Which of the following is/are products of wastewater treatment?
 - (a) Biogas
 - (b) Sludge
 - (c) Both biogas and sludge
 - (d) Aerator
4. Open drain system is a breeding place for which of the following.
 - (a) Flies
 - (b) Mosquitoes
 - (c) Organisms which cause diseases
 - (d) All of these
5. Water polluted by various human activities causes a number of water borne diseases. Which of the following is not a water borne disease?
 - (a) Cholera
 - (b) Typhoid
 - (c) Asthma
 - (d) Dysentery

6. Pick from the following one chemical used to disinfect water.
 - (a) Chlorine
 - (b) Washing soda
 - (c) Silica
 - (d) Coal
7. The system of a network of pipes used for taking away wastewater from homes or public buildings to the treatment plant is known as
 - (a) sewers.
 - (b) sewerage.
 - (c) transport system.
 - (d) treatment plant.
8. Which of the following is a part of inorganic impurities of the sewage?
 - (a) Pesticides
 - (b) Urea
 - (c) Phosphates
 - (d) Vegetable waste
9. In a filtration plant water is filtered using layers of
 - (a) sand and clay.
 - (b) clay and fine gravel.
 - (c) sand and fine gravel.
 - (d) sand, fine gravel and medium gravel.
10. Which of the following is not a source of waste water?
 - (a) Sewers
 - (b) Homes
 - (c) Industries
 - (d) Hospitals

VERY SHORT ANSWER QUESTIONS

11. Why are open drains a concern?
12. State whether the following statements are True or False. In case a statement is false, write the correct statement.
 - (a) Sewage is a solid waste which causes water pollution and soil pollution.

- (b) Used water is wastewater.
 - (c) Wastewater could be reused.
 - (d) Where underground sewerage systems and refuse disposal systems are not available, the high cost on-site sanitation system can be adopted.
13. How are open drains harmful for human health?

SHORT ANSWER QUESTIONS

14. Name two inorganic impurities present in sewage.
15. Animal waste, oil and urea are some of the organic impurities present in sewage. Name two more organic impurities present in sewage.
16. Name two alternative arrangements for sewage disposal where there is no sewerage system.
17. A man travelling in a train threw an empty packet of food on the platform. Do you think this is a proper waste disposal method? Elaborate.
18. Why should we not throw
- (a) used tea leaves into sink?
 - (b) cooking oil and fats down the drain?
19. Match the items of **Column I** with the items of **Column II** with reference to sewage.

| Column I | Column II |
|--------------------------|--------------------------------|
| (a) Inorganic impurities | (i) phosphorus and nitrogen |
| (b) Organic impurities | (ii) nitrates and phosphates |
| (c) Nutrients | (iii) cholera and typhoid |
| (d) Bacteria | (iv) pesticides and herbicides |

20. Given below is a jumbled sequence of the processes involved in a wastewater treatment plant. Arrange them in their correct sequence.
- (a) Sludge is scraped out and skimmer removes the floating grease.
 - (b) Water is made to settle in a large tank with a slope in the middle.
 - (c) Large objects like plastic bags are removed by passing wastewater through bar screens.
 - (d) Sand, grit and pebbles are made to settle by decreasing the speed of incoming wastewater.
 - (e) Wastewater enters a grit and sand removal tank.
21. Three statements are provided here which define the terms – (a) sludge (b) sewage and (c) wastewater. Pick out the correct definition for each of these terms.
- (a) The settled solids that are removed in wastewater treatment with a scraper.
 - (b) Water from kitchen used for washing dishes.
 - (c) Wastewater released from homes, industries, hospitals and other public buildings.
22. A mixture (x) in water contains suspended solids, organic impurities, inorganic impurities (a), nutrients (b), disease causing bacteria and other microbes. Give names for (x), (a) and (b)?

LONG ANSWER QUESTIONS

23. What are the different types of inorganic and organic impurities generally present in sewage?
24. The terms sewage, sewers and sewerage are interlinked with each other. Can you explain, how?

25. Fill in the blanks in the following statements using words given in the box.

air, handpumps, cholera, water, large, ground

- A very _____ number of our people defecate in the open. It may cause _____ pollution and soil pollution. Both the surface water and _____ water get polluted. _____ water is the source for wells, tubewells and _____. Thus it becomes the most common route for _____ borne diseases like _____, dysentery, etc.
26. Describe various steps of cleaning wastewater in a wastewater treatment plant.
27. Think and suggest some ways to minimise waste and pollutants at their source, taking your home as an example.

Answers

Chapter 1

MULTIPLE CHOICE QUESTIONS

- | | | | |
|--------|--------|--------|--------|
| 1. (b) | 2. (b) | 3. (a) | 4. (b) |
| 5. (c) | 6. (a) | 7. (d) | 8. (b) |

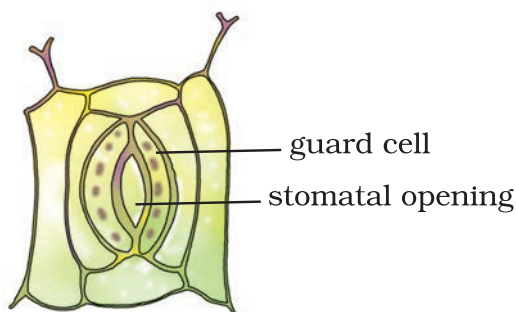
VERY SHORT ANSWER QUESTIONS

9. In both the plants, shoot system and leaves are above ground. They prepare food through photosynthesis and transport it to the underground parts for storage.
10. (a) Sunlight/light energy, (b) carbondioxide.

SHORT ANSWER QUESTIONS

11. The plant survived on the food stored in the stem and roots.
12. (i) PARASITE (ii) SAPROPHYTE
(iii) AUTOTROPH (iv) SYMBIOSIS
13. Roots of pulses (leguminous plants) have a symbiotic association with a bacterium called *Rhizobium* which fixes nitrogen. Hence, farmers need not use nitrogenous fertilizers.
14. Carbohydrates in wheat dough encourage growth of yeast and other saprophytic fungi which break down carbohydrates, and emit a foul smell.
15. (a) chlorophyll (b) water, minerals
(c) carbon dioxide (d) sunlight

16.



LONG ANSWER QUESTIONS

17. (a) (iii); (b) (iv); (c) (i); (d) (v); (e) (ii)
18. It is true that these animals do not eat plants. They hunt and eat herbivorous animals like deer, gaur, bison, zebra, giraffe, etc. which are dependent on plants for food. If there are no plants, herbivorous animals will not survive in which case animals like tiger, wolf, lion and leopard will have nothing to eat.
19. (a) chlorophyll (b) energy (c) energy
(d) photosynthesis (e) carbon dioxide (f) water
(g) food/carbohydrates
20. Number of organisms : 22
(Some examples are given. You may find the rest of the organisms.)

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| B | R | O | S | E | A | T | C | R | O | W |
| A | A | G | N | B | H | I | N | D | I | B |
| N | B | N | G | I | N | G | E | R | C | L |
| Y | B | A | N | H | B | E | C | O | W | F |
| A | I | M | U | S | H | R | O | O | M | F |
| N | T | G | B | E | R | M | W | F | I | O |
| E | L | E | P | H | A | N | T | S | C | X |
| T | S | A | E | Y | N | P | H | B | E | E |
| C | A | R | R | O | T | U | L | S | I | X |

- Autotrophs – Rose, Mango, Bhindi, Carrot, Banyan, Tulsi, Ginger, Yam
- Heterotrophs – Elephant, Ant, Yeast, Tiger, Mushroom, Fox, Mice, Owl, Cow, Crow, Rabbit, Bee, Fish
- Herbivores – Elephant, Cow, Rabbit, Bee
- Carnivores – Fox, Tiger
- Omnivores – Ant, Mice, Owl, Crow, Fish
- Saprophytes – Mushroom, Yeast
21. (b) fish, heterotroph
(c) mosquito, parasite
(d) mushroom, saprophyte

Chapter 2

MULTIPLE CHOICE QUESTIONS

- | | | | |
|--------|---------|---------|---------|
| 1. (b) | 2. (b) | 3. (a) | 4. (d) |
| 5. (a) | 6. (c) | 7. (a) | 8. (c) |
| 9. (b) | 10. (b) | 11. (a) | 12. (a) |

VERY SHORT ANSWER QUESTIONS

13. (i) Large intestine (ii) Small intestine
(iii) Tongue (iv) Liver
14. (a) False – Tongue is attached to the floor of the mouth cavity at the back.
(b) False – The large intestine is shorter and wider than the small intestine of the human alimentary canal.
(c) True
(d) True
15. (i) Starch; others are glands.
(ii) Stomach; others are digestive glands.
(iii) Absorption; others are parts of the mouth.
(iv) Small intestine; no juices are released by other parts/ no digestion in other parts.
16. With the help of different types of taste buds present in the tongue.
17. (a) mouth, anus (b) sockets, gums
(c) buccal cavity, small intestine (d) liver
18. (a) Assimilation (b) Digestion (c) Egestion
(d) Ingestion (e) Absorption

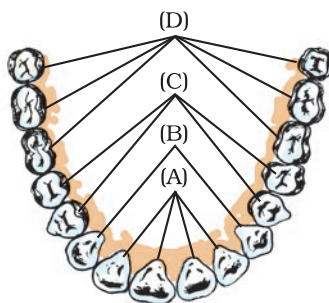
SHORT ANSWER QUESTIONS

19. (a) (iii); (b) (i); (c) (iv); (d) (ii)

20. In test tube 'A' – blue black colour because of presence of starch.
In test tube 'B' – colour of iodine will not change because of digestion of starch into sugars.
21. The food item would be fat because bile juice of the gall bladder helps in the digestion of fat. Removal of gall bladder leads to difficulty in digestion of fatty substances.
22. (a) (iv); (b) (v); (c) (i); (d) (iii); (e) (ii)
23. Hint (to digest the food completely.)
24. Sometimes, when one eats hurriedly, talks or laughs while eating, the flap like valve, epiglottis closing the passage of windpipe remains open. The food may enter the wind pipe and coughing helps to clear it.

LONG ANSWER QUESTIONS

25. (a) intestinal (b) water, salts
(c) back, front (d) pseudopodia, vacuole
26. A. Incisors B. Canines
C. Premolars D. Molars



27. (a) Liver
(b) Insolubility of fat in water.
(c) Breaks down big fat droplets into smaller droplets.
(d) Small intestine
(e) No

-
- An anatomical diagram of the female reproductive system. The diagram shows the uterus, fallopian tubes, ovaries, and the internal and external genitalia. Labels (a) through (d) point to specific parts: (a) points to the uterus, (b) points to the fallopian tube, (c) points to the ovary, and (d) points to the vagina.

- | Type of Teeth | Number of teeth | |
|---------------|-----------------|---------------|
| | In my mouth | In the figure |
| Incisors | 4 | 4 |
| Canines | 8 | 8 |
| Premolar | 8 | 8 |
| Molar | 8 | 12 |

- 12/04/2018

Chapter 3

MULTIPLE CHOICE QUESTIONS

- | | | | |
|--------|---------|--------|--------|
| 1. (c) | 2. (d) | 3. (a) | 4. (c) |
| 5. (d) | 6. (b) | 7. (a) | 8. (b) |
| 9. (d) | 10. (c) | | |

VERY SHORT ANSWER QUESTIONS

11. (a) silk, wool (b) cocoons, moth
(c) hair (d) air, conductor
12. (a) True
(b) False, generally sheep are reared.
(c) False, it is sericulture.
(d) True
(e) False, used to make woollen fabric.
13. Hair traps a lot of air, which is a poor conductor of heat.

SHORT ANSWER QUESTIONS

14. (a) (iii); (b) (iv); (c) (ii); (d) (i)
15. Correct sequence is – (iii), (iv), (v), (i), (ii)
16. (a) sericulture (b) silkworm
(c) mulberry (d) reeling
17. Yak, Camel, Sheep
18. (a) Eggs of silk moth on mulberry leaves
(b) Silkworm
(c) Cocoon
(d) Cocoon with developing moth
19. Correct order – (e), (a), (d), (c), (f), (b)
20. (a) (iii); (b) (i); (c) (ii); (d) (iv)

LONG ANSWER QUESTIONS

21. (a) female (b) eggs (c) larvae
(d) caterpillars (e) silkworms (f) pupa
(g) cocoon
22. The thread which burns with a smell of burning hair is from pure silk. Silk and hair are protein fibres. Cotton and paper both are carbohydrates, and on burning they give similar smell.
23. Hint: Fabric needs more energy to tear apart as compared to a single fibre.
24. Hint: Write briefly about (i) shearing, (ii) scouring, (iii) sorting (iv) picking out of burrs from the hair, (v) dyeing of fibres, (vi) straightening, combing of fibres and rolling into yarn.
25. Hint: Trace life history of silk moth from eggs – larvae – pupa – moth (Fig. 3.9 a – f of Class VII Science Textbook, NCERT)

Chapter 4

MULTIPLE CHOICE QUESTIONS

- | | | | |
|--------|--------|--------|--------|
| 1. (a) | 2. (b) | 3. (c) | 4. (a) |
| 5. (a) | 6. (a) | 7. (c) | |

VERY SHORT ANSWER QUESTIONS

8. They must use some insulating material like, sack, saw dust, newspaper, etc. to cover the ice.
9. Thermometer B will show a greater rise in temperature because hot air rises up or air on the top of the candle flame is getting heated by convection.
10. Yes. Wool is poor conductor of heat.
11. Mercury expands when heated. Hence, it rises in the capillary tube.

SHORT ANSWER QUESTIONS

12. (i) The heat will flow in both the directions i.e. from O to P and O to R.
(ii) At first the pins at R and P will fall simultaneously followed by the pin at Q.
13. In case 'B' the pin P will fall before the pin Q because the heat will reach pin P first. In case 'A', the heat travels in both the directions and pins P and Q will fall simultaneously.
14. (i) In order to maintain the desired temperature of the mixture, the container can be wrapped either by woollen material or any other poor conductor of heat. Alternately, the mixture can be kept in a heat resistant container.
(ii) The container can be kept in the sun or near the gas stove while cooking.

15. The jerk to the thermometer will allow the mercury in or above the kink to flow into the bulb so that the mercury level is below normal temperature.
16. If we hold a thermometer by its bulb, the mercury in the bulb will expand due to our body temperature.
17. (i) On a hot summer afternoon the tent made up of white fabric will be preferred as white colour is a bad absorber and good reflector of heat.
(ii) No, the black fabric tent will be preferred during winter.
18. The windows of houses in coastal areas should preferably face towards the sea as sea breeze will keep it cool during day time.
19. Position 'P' will feel warmer due to the hot air rising up
P \rightarrow Convection
T \rightarrow Radiation
20. The pin on the wire in case A will fall first as heat will reach to it before it reaches the pin in case B.

Chapter 5

MULTIPLE CHOICE QUESTIONS

- | | | | |
|--------|---------|---------|--------|
| 1. (b) | 2. (c) | 3. (b) | 4. (d) |
| 5. (a) | 6. (c) | 7. (d) | 8. (a) |
| 9. (d) | 10. (c) | 11. (c) | |

VERY SHORT ANSWER QUESTIONS

12. **Hint:** Evaporation
13. (a) False. Substances can be neutral as well.
(b) False. Acids do not turn all indicators red.
(c) True
(d) False. It does not change the colour of litmus at all.
(e) False. It is a man-made indicator.
(f) True
(g) False. It is acidic in nature.
14. No, because orange juice is acidic in nature.

SHORT ANSWER QUESTIONS

15.

| Test Tube | Nature of Solution | Change in colour of red litmus |
|-----------|--------------------|--------------------------------|
| A | Neutral | No change |
| B | Basic | Turn blue |
| C | Acidic | No change |
| D | Neutral | No change |

16. Wasp sting inject a liquid in the skin which is acidic in nature. Hence, baking soda is the appropriate remedy, as it is basic in nature and neutralises the acid.

- ## LONG ANSWER QUESTIONS

- 21.

[illegible]

- If the soil is too basic, organic matter is added to it. Organic matter releases acids which neutralises the basic nature of the soil.

23. **Hint:** Use both red and blue litmus solutions and predict the colours in each case.

24.

| Test Tube | Effect on blue litmus | Effect on red litmus | Effect on phenolphthalein solution |
|-----------|-----------------------|----------------------|------------------------------------|
| A | turns red | remains red | colourless |
| B | remains blue | turns blue | pink colour |
| C | remains blue | remains red | colourless |

25. **Hint:**

- (a) Since factory waste may contain acids or bases, it can kill the fish.
- (b) If the factory waste is acidic in nature, it can be neutralised by adding basic substances.

26. **Hint:**

- 1. Indigestion
- 2. Ant sting

Chapter 6

MULTIPLE CHOICE QUESTIONS

- | | | | |
|--------|---------|--------|--------|
| 1. (d) | 2. (b) | 3. (d) | 4. (c) |
| 5. (d) | 6. (d) | 7. (a) | 8. (a) |
| 9. (a) | 10. (c) | | |

VERY SHORT ANSWER QUESTIONS

11. (a) True (b) True (c) True (d) False.
12. Melting of ice. (Similar examples of such type may be given)
13. A physical change that cannot be reversed.

SHORT ANSWER QUESTIONS

14. (a) (iv); (b) (vi); (c) (v); (d) (i); (e) (iii); (f) (ii)
15. (a) physical (b) reversible (c) physical
(d) rusted, chemical, substance.
16. (i) and (iii) are physical changes
(ii) and (iv) are chemical changes
17. (1) Iron + Air + Water \rightarrow Iron oxide
(2) Copper sulphate + Iron \rightarrow Iron sulphate + Copper
18. (a) White coloured insoluble calcium carbonate is formed.
(b) Carbon dioxide is evolved due to the chemical reaction between acetic acid and sodium hydrogencarbonate.

LONG ANSWER QUESTIONS

19. (a) (i) Folding of paper (ii) Melting of ice.
(b) (i) Tearing of paper. (ii) Breaking of glass.
(c) (i) Reaction between vinegar and baking soda.
(ii) Burning of a match stick.

There are many other examples in each case which can be given.

20. (a) Reaction between copper sulphate solution and iron metal.
(b) Reaction between baking soda and vinegar (carbon dioxide is evolved).
(c) Burning of crackers.
21. (a) Yes, rust is quite different from iron.
(b) No.
(c) Yes, it is a chemical change.
(d) (i) Setting of curd from milk.
(ii) Burning of magnesium ribbon to form magnesium oxide.
22. (a) (i) Colour of the solution in the beaker changes from blue to green.
(ii) A brown coloured deposit is found on the surface of the iron nail.
(b) The changes are chemical in nature as new substances, iron sulphate (green) and copper (brown) are formed.
(c)
$$\begin{array}{ccccc} \text{Copper sulphate} + \text{Iron} & \longrightarrow & \text{Iron Sulphate} + \text{Copper} \\ \text{blue} & & \text{green} & & \text{brown} \end{array}$$

Chapter 7

MULTIPLE CHOICE QUESTIONS

- | | | | |
|--------|--------|--------|--------|
| 1. (a) | 2. (b) | 3. (c) | 4. (b) |
| 5. (d) | 6. (b) | 7. (c) | 8. (a) |
| 9. (c) | | | |

VERY SHORT ANSWER QUESTIONS

10. Adaptation.
11. Frog or any other amphibian.
12. (a) False, it is easy to predict the climate rather than the weather.
(b) False, (since very few prey are available) polar bear need to have a strong sense of smell.
(c) True.
(d) False, tropical rain forests are hot and humid throughout the year because of heavy rains all the time.
13. (i) Climate (ii) Polar
(iii) Thermometer (iv) Humidity

SHORT ANSWER QUESTIONS

14. (a) (iv); (b) (ii); (c) (i); (d) (iii)
15. Weather is a complex phenomenon which can vary over a short period of time and thus is difficult to predict. It is easier to predict climate as it is the average weather pattern taken over a long time.
16. Polar regions: polar bear/penguin/reindeer/musk oxen/any other.
- Tropical rain forests: red eyed frog/elephants/lion tailed macaque/any other.

17. Layer of fat under skin, thick white fur.
18. Streamlined body, webbed feet.
19. (i) Weather is the daily fluctuation in temperature, humidity, etc., while climate is the average weather pattern of a place.
- (ii) Humidity indicates the wetness of a place due to amount of moisture in the atmosphere while rainfall is the drops of water that fall from clouds on the ground.
- (iii) Polar region remains very cold for most part of the year whereas tropical rain forest is hot and humid.
- (iv) Maximum and minimum temperatures of the day indicate highest and lowest recorded temperature, respectively.

LONG ANSWER QUESTIONS

20. (a) atmosphere
(b) temperature
(c) humidity
(d) rainfall
(e) windspeed
(f) average

21.

| Tropical Rain Forest | Polar Region |
|--|---|
| ● Hot and Humid Climate | ● Penguin |
| ● Gorilla | ● Reindeer |
| ● Monkey | ● Greenland |
| ● Assam | ● Sun does not rise for six months |
| ● Day and night are almost equal in length throughout the year | ● Winter temperature around -37°C . |
| ● Western Ghats | |

Chapter 8

MULTIPLE CHOICE QUESTIONS

- | | | | |
|--------|--------|--------|--------|
| 1. (d) | 2. (c) | 3. (a) | 4. (d) |
| 5. (b) | 6. (b) | | |

VERY SHORT ANSWER QUESTIONS

7. As it is not near to the sea/ocean.
8. Indian Ocean
9. (i) pressure
(ii) wind
(iii) heating
(iv) low
10. (i) False
(ii) False
(iii) False
(iv) True
11. B's exhaust fan will expel the hot air more effectively because hot air rises up and her fan is at greater height than A's.
12. To avoid the roof getting blown away due to the low pressure created by heavy wind.
13. The clothes will be blown towards the house due to sea breeze blowing towards the land.
14. B as the wind is blowing from the sea to the land.
15. Midnight.

SHORT ANSWER QUESTIONS

16. (a) (ii) and (iv)
(b) (i) and (iii)

17. The air inside the bottle contracts due to low temperature hence the bottle collapses due to the outside pressure.
18. High speed wind passing over the umbrella creates low pressure. Therefore the umbrella upturns.
19. (i) Put heavy stones on it.
(ii) Screw it tight.

LONG ANSWER QUESTIONS

20. Activity 8.6, Science Textbook, Class VII, NCERT or students may design any other activity and the teacher may verify the validity of the same.
21. In the day time wind blows from sea to land. This sea breeze makes the trees to bend towards the land.

22.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| G | C | H | T | H | T | E | N | M | R |
| R | C | Y | H | O | O | N | C | Z | P |
| V | L | O | U | E | R | O | E | R | T |
| A | N | C | N | A | N | N | L | C | L |
| H | T | H | D | B | A | D | A | P | I |
| L | U | N | E | K | D | C | Y | D | G |
| H | U | R | R | I | C | A | N | E | H |
| W | C | T | S | L | M | N | O | P | T |
| M | Y | O | T | Y | P | H | O | O | N |
| O | C | R | O | H | C | T | P | Q | I |
| C | L | N | R | U | A | Y | R | S | N |
| F | O | A | M | R | N | P | T | U | G |
| P | N | D | X | R | E | H | Y | E | N |
| Z | E | O | A | I | O | U | N | Y | B |

Chapter 9

MULTIPLE CHOICE QUESTIONS

1. (b) 2. (c) 3. (b) 4. (a)

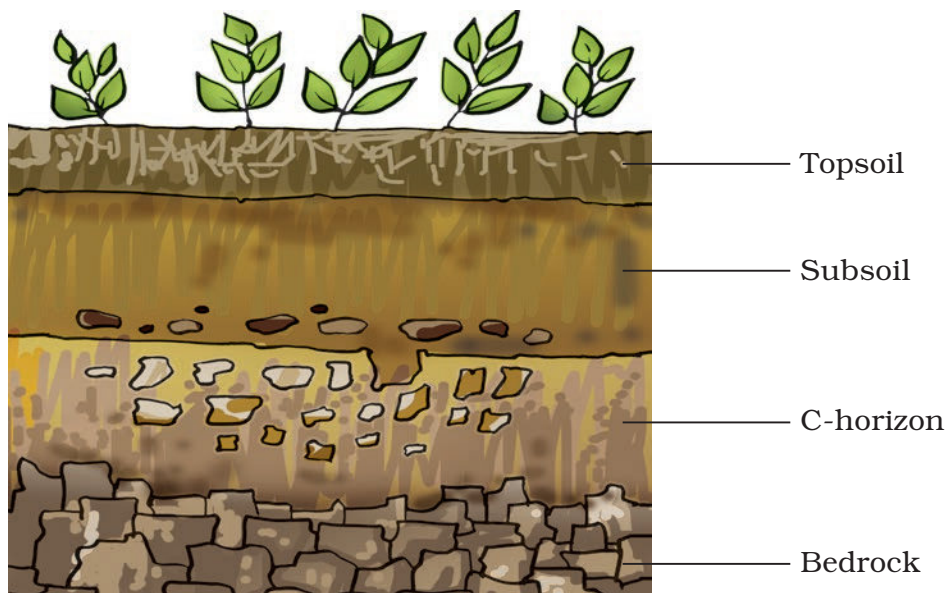
VERY SHORT ANSWER QUESTIONS

5. Rock > Gravel > Sand > Silt > Clay
6. sand, silt, clay
7. (a) Weathering (b) Erosion
(c) Soil pollution (d) Percolation
8. (a) Humus (b) Soil Profile
(c) Horizon (d) Loam
(e) Weathering (f) Percolation

SHORT ANSWER QUESTIONS

9. Situation 'B' is advantageous to plants because A- and B- horizons are rich in water, minerals and humus.
10. He can add a small quantity of quick lime or slaked lime solution to the soil. This will make the acidic soil neutral.
11. No, it is not a good practice. Plants cover the soil surface and their roots bind the soil particles and hold them in place. During strong winds and rains they prevent soil erosion and thereby protect the top soil.
12. The soil surface has loose top soil which is easier to dig. At deeper layers, partially weathered rocks or bedrocks are present, which are hard making digging difficult.

13.

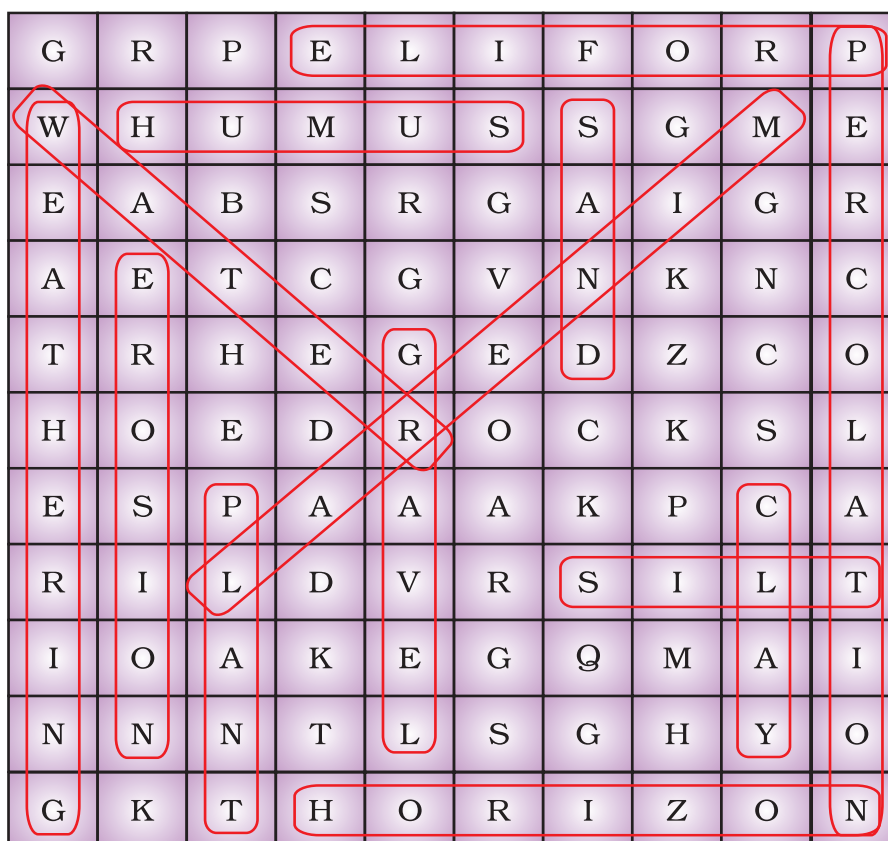


14. Deserts are vast stretches of sand where the falling rain water immediately percolates downwards in the spaces between sand particles. Due to this he did not see streams of water in the desert region.
15. (a) (vi); (b) (iv); (c) (i); (d) (ii); (e) (iii); (f) (v)

LONG ANSWER QUESTIONS

16. Roots, although underground, possess living cells that require oxygen for respiration and production of energy. They absorb oxygen that is present in the spaces between soil particles. But in water-logged soils, water occupies the spaces between soil particles and pushes the oxygen out into the atmosphere. Thus, roots are deprived of oxygen and this affects root and plant growth.
17. In dense forests, the tree cover (canopy) prevents rain water from directly falling on the ground/soil. Also roots of the vegetation bind the soil particles and hold them together. As a result soil erosion is minimised.
- But in barren, open fields the soil is exposed to the falling rain. The soil particles become loose due to the impact of raindrops and the flow of water carries them away. The flowing water further erodes the soil surface aggravating erosion.

18. (a) For enabling easy root growth;
 (b) For easier percolation of water;
 (c) For aerating the soil/enabling air to get into deeper layers of soil;
 (d) For removing the weeds.
19. (a) This is so because of excessive use of water which depletes the ground water.
 (b) Towns and cities have asphalted roads and vast areas of soil are concreted. As a result, rain water cannot percolate to recharge ground water and the ground water level further decrease. Villages have larger areas of open soil surface and fewer asphalted roads and concrete surfaces. Thus, larger soil surface area is available for rain water to percolate into the soil easily and recharge the ground water. As a result, even shallow borewells yield water.
20. Humus, Sand, Water, Clay, Gravel, Weathering, Horizon, Percolation, Mineral, Plant, Erosion, Profile.



Chapter 10

MULTIPLE CHOICE QUESTIONS

1. (d)
2. (c)
3. (a)
4. (c)
5. (b)
6. (d)

VERY SHORT ANSWER QUESTIONS

7. (a) False : Oxygen breaks down glucose inside the cells of organisms.
(b) True
(c) False : Insects have spiracles on the sides of the body.
(d) True
8. (a) air, soil (b) floor (c) stomata (d) tracheae

SHORT ANSWER QUESTIONS

9. (a) Snail, as it does not breathe by means of trachea.
(b) Earthworm, because it breathes through its skin and it does not have lungs.
(c) Fish, as most fish breathe through their gills and do not have lungs.
(d) Tadpole, as it breathes through gills and does not have lungs.
10. Oxygen present in air is responsible for respiration. The oxygen breaks down food and releases energy.
11. sleeping > watching T.V. > brisk walk > cycling

Whenever a person does an activity, the breathing rate becomes faster. It further increases with strenuous work to provide more oxygen to the cells to get more energy.
12. On a cold day, the warm and moist air exhaled by us condenses into mist when it comes in contact with the cold air of the atmosphere. This looks like white smoke.

13. During drowsiness, our breathing rate slows down. The lungs do not get enough oxygen from the air resulting in yawning. Yawning brings extra oxygen into the lungs and helps us to keep awake.
14. (i) Spiracles are present on the sides of insects' body while stomata are present on the lower surface of leaves.
(ii) Spiracles are fewer in number as compared to stomata.
(iii) Spiracles lead to an extensive network of tracheal system which is absent in the leaves.
(you can add more)

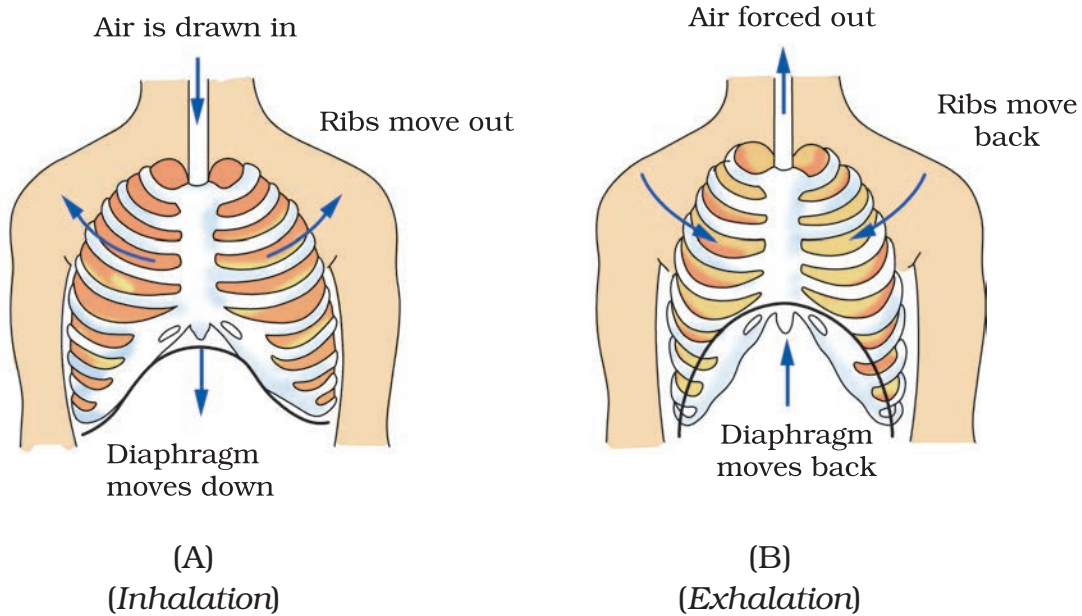
LONG ANSWER QUESTIONS

15. (a) The pain in her legs could be because of the accumulation of lactic acid in the muscles. During heavy exercise or running, etc., the muscle cells respire anaerobically and produce lactic acid.
(b) The massage gave her relief because it improves the circulation of blood leading to increased supply of oxygen to the muscle cells which helps in complete breakdown of lactic acid into CO_2 and water.
16. (a) 'C'. The mice kept under the jar will breathe out CO_2 continuously increasing its amount in the bell jar.
(b) 'A' jar in which the CO_2 released during respiration is used by the plants during photosynthesis.
17. (a) Exhalation process during respiration.
(b) The lime water in test tube 'B' turns milky but water in tube 'A' remains unchanged. Because CO_2 is present in the exhaled air, it mixes with lime water in 'B' and turns it milky.
18. (a) The CO_2 released during respiration by the yeast results in the rise of dough.
(b) During anaerobic respiration, yeast produces alcohol resulting in sour smell.
(c) Sugar acts as food for yeast.

- (d) At low temperatures, yeasts will not multiply and respire because of which the dough will not rise or become sour.

19. (a) Fig. (A) indicates inhalation, and Fig. (B) indicates exhalation.

(b)



20. (a) iii; (b) iv; (c) i; (d) ii

Chapter 11

MULTIPLE CHOICE QUESTIONS

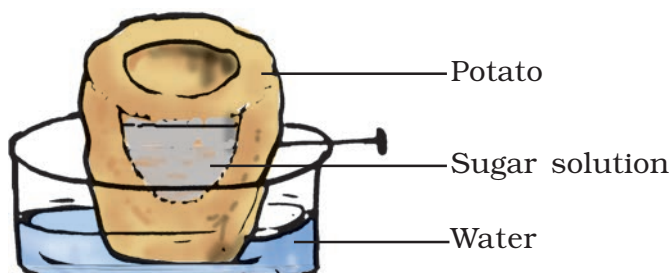
1. (c)
2. (d)
3. (d)
4. (c)
5. (c)
6. (c)

VERY SHORT ANSWER QUESTIONS

7. Blood flow in arteries is rapid and at a high pressure. Also arteries have thick elastic walls.
8. Heart is partitioned into four chambers.
9. Heart.

SHORT ANSWER QUESTIONS

10.



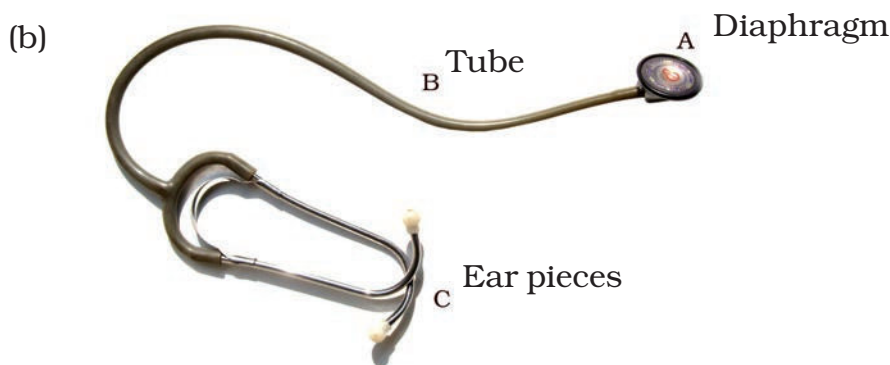
11. (d) → (e) → (b) → (a) → (c)
12. Possible answers are:
 - Without the root hairs the roots will not be able to absorb water and nutrients and the plant will die.
 - The stem of the rose plant may grow new roots and the plant will live.
 - The rose plant may not be able to survive in a different type of soil.
13. (a) Pulmonary artery
(b) It is so because arteries carry blood away from the heart.

14. (a) In dialysis, blood is filtered periodically through an artificial kidney.
(b) In the event of kidney failure.

15.

| | Process | | Organ |
|-----|----------------------------|---|---------------------------|
| (a) | exhalation | - | lungs |
| (b) | egestion | - | large intestines and anus |
| (c) | excretion | - | kidneys |
| (d) | perspiration (sweating) | - | sweat glands |

16. (a) The given instrument is stethoscope.



17. Hint: Transpiration generates a “suction pull” which draws water up the tall trees.

LONG ANSWER QUESTIONS

18. (i) (a); (ii) (d); (iii) (f); (iv) (b); (v) (e); (vi) (c)
19. (a) arteries, atria, capillaries, veins, heart.
(b) ureter, kidneys, urethra, urinary bladder.
(c) root hairs, xylem, phloem.
20. (a) arteries (b) veins (c) veins
(d) arteries (e) arteries (f) veins
(g) arteries (h) veins.
21. (a) A blood clot had formed.
(b) Dark red due to clotting of blood.
(c) Platelets.

Chapter 12

MULTIPLE CHOICE QUESTIONS

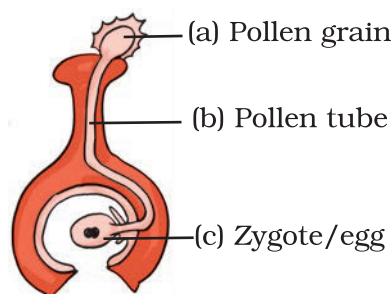
- | | | | |
|--------|--------|--------|--------|
| 1. (b) | 2. (c) | 3. (a) | 4. (c) |
| 5. (c) | 6. (a) | 7. (c) | |

VERY SHORT ANSWER QUESTIONS

8. They can reproduce asexually by means of spore formation.
9. Rice, as it does not reproduce by vegetative propagation whereas the other three plants do.
10. Branch.
11. It shows self pollination.
12. The seeds from the tree may have fallen below and germinated into small plants.

SHORT ANSWER QUESTIONS

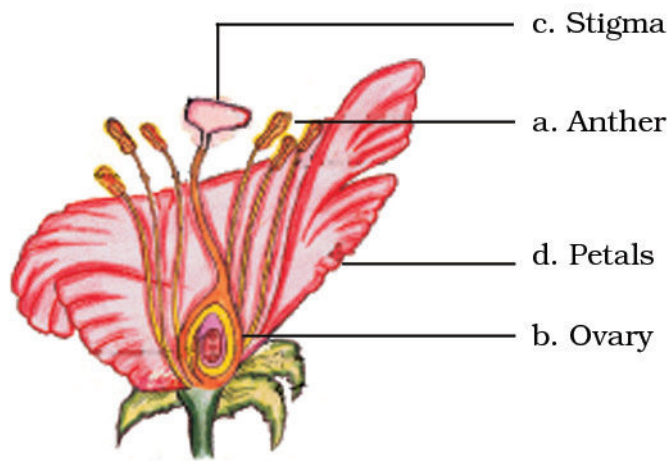
13.



14. (a) It is bread mould, a fungus.
(b) They develop from spores.
15. (i) to (ii) are dispersed by wind;
(iii) is dispersed by animal.
16. Coconut fruit has spongy fibers, which helps it to float in water.

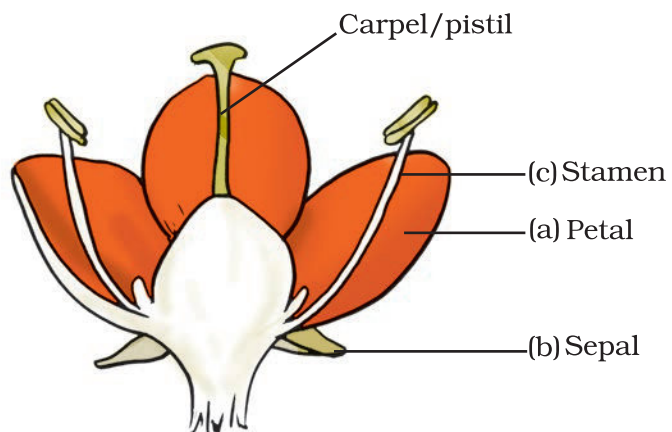
LONG ANSWER QUESTIONS

17.



18. (a) zygote (b) fertilization (c) embryo
(d) seed (e) fruit

19.



20. (a) dispersed by wind.
(b) dispersed by wind .
(c) dispersed by animal.

Chapter 13

MULTIPLE CHOICE QUESTIONS

1. (d)
2. (c)
3. (a)
4. (b)
5. (c)
6. (a)
7. (d)
8. (a)
9. (b)

VERY SHORT ANSWER QUESTIONS

10. Non-uniform.
11. Their speed will not be same.
12. Boojho moves at a higher speed as he covers the same distance in a lesser time than Paheli.

SHORT ANSWER QUESTIONS

13.

| | | | | | | |
|--------------|---|---|---|----|----|----|
| Distance (m) | 0 | 4 | 8 | 12 | 16 | 20 |
| Time (s) | 0 | 2 | 4 | 6 | 8 | 10 |

14.

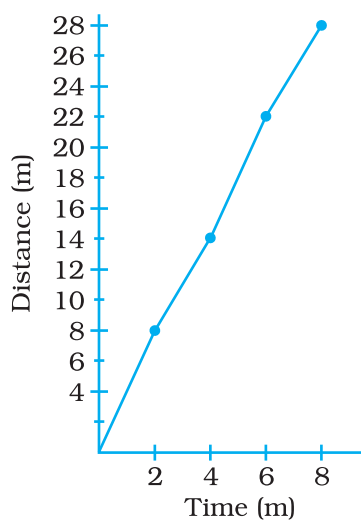
$$\begin{aligned}
 &12 \text{ years } 3 \text{ months} \\
 &= 12 \times 365 + 3 \times 30 = 4470 \text{ days} \\
 &= 4470 \times 24 \times 60 \times 60 \text{ s} = 386208000 \text{ s}
 \end{aligned}$$

15.

$$10 \text{ km/s}$$

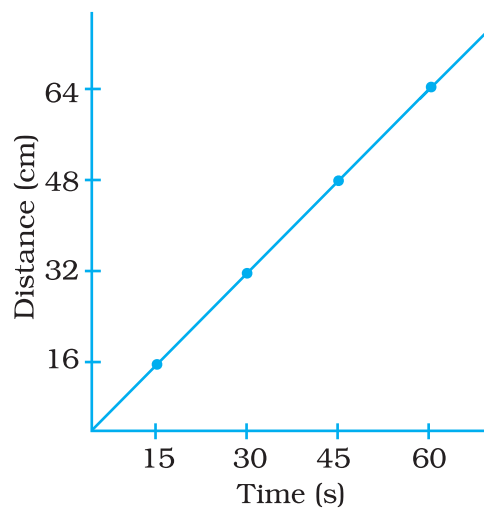
16.

Since the distance covered per unit time for the entire distance covered is not the same, the motion is non-uniform.



17.

| | | | | | |
|---------------|---|----|----|----|----|
| Time (s) | x | 15 | 30 | 45 | 60 |
| Distance (cm) | y | 16 | 32 | 48 | 64 |

**LONG ANSWER QUESTIONS**

18. (a) 8 m from the starting point
(b) 6 m
(c) 0.4 m/s
19. 12 km/h; Average speed 9 km/h
20. (a) Boojho is at rest, i.e. his speed is zero
(b) Non-uniform
(c) $\frac{75}{4} = 18.75$ m/minute

Chapter 14

MULTIPLE CHOICE QUESTIONS

1. (a)
2. (c)
3. (c)
4. (b)
5. (d)

VERY SHORT ANSWER QUESTIONS

6. Low melting point.
7. Miniature Circuit Breaker (MCB).
8. (i) conductor (ii) chemicals stored
(iii) safety device (iv) battery
9. (i) Battery (ii) Fuse
(iii) Torch (iv) Switch
10. No. The towel may burn due to the heat produced by the bulb. Besides, it will also result in wastage of electric energy.
11. CFLs do not waste electricity as heat.
12. To check the excessive flow of electric current.

SHORT ANSWER QUESTIONS

13. No, a geyser and a television set require different amount of current. Therefore the fuse used in these will be of different ratings.
14. Heating effect – Geyser, room heater.
Magnetic effect – Electric bell, Cranes to lift magnetic material.
15. The child may put his/her fingers into the socket and he/she may get an electric shock which could be fatal.
16. Paheli's electromagnet will attract more pins as it has more number of turns of wire on it and thus a stronger electromagnet.

LONG ANSWER QUESTIONS

17. Some of the questions can be
- (i) Why does the nail attract the pins?
 - (ii) What will happen if we connect more cells in the circuit?
 - (iii) What will happen if we use some other material like a straw in place of the nail?
 - (iv) What will happen if we wrap the wire on the nail more tightly?
- or
- Any other appropriate question.
18. (i) No, the amount of heat produced in both the cases will not be equal. Amount of heat produced in a wire depends upon the length of the wire.
- (ii) No, the amount heat produced in the wire depends upon the thickness of the wire.
19. **Hint:** Working of an electric bell.



20. (i) $\frac{+}{-} \mid =$
- (ii) $\text{---} \diagup \text{---}$
- (iii) $\text{---} \bigcirc \text{---}$
- (iv) $\text{---} \mid \text{---} \mid \text{---} \mid \text{---}$

Chapter 15

MULTIPLE CHOICE QUESTIONS

- | | | | |
|--------|--------|--------|--------|
| 1. (c) | 2. (a) | 3. (b) | 4. (b) |
| 5. (b) | 6. (b) | 7. (c) | 8. (b) |

VERY SHORT ANSWER QUESTIONS

9. Concave lens.
10. (a) concave
(b) plane
(c) convex
(d) concave
11. (a) False
(b) False
(c) True
(d) False

SHORT ANSWER QUESTIONS

12. Convex mirror. Convex mirrors can form images of objects spread over a large area. So these help the drivers to see the traffic of a large area behind them.
13. A – convex lens; B – concave lens.
14. No, laser torch gives out light of only one colour.
- 15.
- | | | | | | | |
|---|---|---|--------|---|---|---|
| | 1 | → | Red | ← | 7 | |
| | 2 | → | Orange | ← | 6 | |
| | 3 | → | Yellow | ← | 5 | |
| A | 4 | → | Green | ← | 4 | B |
| | 5 | → | Blue | ← | 3 | |
| | 6 | → | Indigo | ← | 2 | |
| | 7 | → | Violet | ← | 1 | |

16. The driver will not be able to see traffic spread over a large area behind him.
17. The beam of light will be diffused with lower intensity.
18. The image formed on the screen could be enlarged and erect if the object is placed upside down between F and $2F$ of the lens.
19. If the letters appear bigger/magnified, then the lens is a convex lens. If the letters appear smaller, then the lens will be concave lens.
20. He will fix a convex mirror because it can form images of object spread over a large area.
21. The object is moving away from the lens.

LONG ANSWER QUESTIONS

22. **Hint :** (i) By using a concave mirror and a screen.
(ii) By using a convex lens and a screen.
23. It is a convex lens.
No, when the object is placed close to a convex lens then the image formed is virtual which cannot be obtained on screen.
24. **Hint :** By forming images with the help of the three mirrors.

Chapter 16

MULTIPLE CHOICE QUESTIONS

- | | | | |
|--------|---------|--------|--------|
| 1. (d) | 2. (a) | 3. (a) | 4. (b) |
| 5. (c) | 6. (a) | 7. (d) | 8. (c) |
| 9. (d) | 10. (a) | | |

VERY SHORT ANSWER QUESTIONS

11. (a) True (b) False, snow is also a solid form of water.
(c) True (d) True
12. (a) change “above” with “below”
(b) change “evaporation” with “seeping”
(c) change “vapour” with “water”
13. (a) from ground water
(b) rain
(c) evaporation
14. (a) False, it is called infiltration
(b) False, it is 71% not 51%.
(c) True
(d) True

SHORT ANSWER QUESTIONS

15. water, soil, infiltration
16. hot, scarcity, workers, dry, rivers, harvesting.
17. (c), (b), (a), (d)
18. **Hint:**
(i) Nature - Snow, water, water vapour
(ii) Home - Ice, water, steam

19. (a) Condensation and melting; water bodies like rivers, lakes, etc.
(b) Freezing; Cold regions like high mountains, poles, etc.
(c) Evaporation; atmosphere.
20. (a) (v); (b) (iv); (c) (i); (d) (iii); (e) (ii)
21. (a) freshwater (b) recharge
(c) aquifer (d) snow
22. (a) land; liquid form (droplet of water).
(b) soil; liquid form.
(c) atmosphere; solid form.
(d) rain; underground water.
(e) water bodies; liquid.

LONG ANSWER QUESTIONS

23. (a) solid (b) gaseous (c) well (d) lake (e) ice

Note: For (c) and (d) other sources of water (such as pond, spring, etc.) may also be given.

24. **Hint:**

Water present underground; well, lake, pond, spring, hand pump, etc.

25. **Hint:**

There will be scarcity of water and we will not be able to do various activities where water is required. It will also affect life on earth.

Chapter 17

MULTIPLE CHOICE QUESTIONS

- | | | | |
|--------|---------|--------|--------|
| 1. (b) | 2. (c) | 3. (d) | 4. (a) |
| 5. (b) | 6. (c) | 7. (a) | 8. (d) |
| 9. (a) | 10. (c) | | |

VERY SHORT ANSWER QUESTIONS

11. Forest absorbs the noise.
12. (a) True
(b) False (the sequence is trees, shrubs and lowest one herbs).
(c) True
(d) True
13. grass → insects → frog → snake → eagle

SHORT ANSWER QUESTIONS

14. Jungle crow, myna, dove, kingfisher, koel, blue jay, hornbill, etc. (any four)
15. No, they would not have seen the same type of plants and animals. This is so because climatic conditions in the two forests would vary leading to variations in the types of plants and animals.
16. The decaying animal dung provides nutrients to the growing seedlings.
17. (a) (iii); (b) (v); (c) (iv); (d) (i); (e) (ii)
18. Lesser number of trees will be available due to deforestation. In this condition of absence of trees the soil will not hold water leading to floods.
19. Gum, oils, spices, fodder for animals, medicinal plants, etc. (any four).

LONG ANSWER QUESTIONS

20. (i) Oxygen is given out by plant leaves.
(ii) Carbon dioxide is consumed by the plants to prepare their food by the process of photosynthesis.
(iii) Decomposers play an important role in providing nutrients to plants.
21. **Hint:**
(i) Dry leaves and remains of dead animals are converted to a dark coloured substance called humus. This provides nutrients to the plants.
(ii) Dead animals become food for vultures, crows, jackals and insects.
(iii) Broken branches of trees are used as fuel by the people living in the vicinity of the forest.
22. (i) construction of roads.
(ii) construction of buildings.
(iii) industrial development.
(iv) increasing demand of wood.
23. Picture of any forest with two animals and two birds.
24. **Hint:**
Forest provides home (shelter), food and water to the animals living there.
25. **Hint:**
(i) Forests give oxygen to keep us alive.
(ii) Forests absorb carbon dioxide, a gas which in excess in atmosphere contribute to climatic changes.
(iii) Forests provide us wood, gum, medicinal plants and many more things.
(iv) Forests save the soil from erosion.
(v) Forests help in maintaining the ground water level.

Chapter 18

MULTIPLE CHOICE QUESTIONS

- | | | | |
|--------|---------|--------|--------|
| 1. (d) | 2. (a) | 3. (c) | 4. (d) |
| 5. (c) | 6. (a) | 7. (b) | 8. (c) |
| 9. (d) | 10. (a) | | |

VERY SHORT ANSWER QUESTIONS

11. It is so because they create unsanitary and unhygienic conditions.
12. (a) False (**Hint:** Write 'liquid' in place of 'solid').
(b) True
(c) True
(d) False (**Hint:** Write 'low' in place of 'high').
13. In the unhygienic conditions of open drains, flies, mosquitoes, and other insects breed and spread a number of diseases.

SHORT ANSWER QUESTIONS

14. Nitrates, Phosphates, Metals (any two).
15. Pesticides, herbicides, fruits and vegetable waste (any two).
16. (i) Septic tanks (ii) Composting pits
17. No, one must always put the waste in a nearby dustbin or carry it until a proper place to dispose it of is found. Waste, not properly disposed may go into the drains and choke them. It also makes public places dirty and unhygienic.
18. (a) Used tea leaves may choke the drain-pipe of the sink.
(b) Cooking oil and fats can harden and block the pipes.
19. (a) (ii); (b) (iv); (c) (i); (d) (iii)
20. Correct sequence – (c), (e), (d), (b), (a).

21. (a) sludge (b) wastewater (c) sewage
22. (x) sewage
(a) nitrates, phosphates and metal
(b) phosphorus and nitrogen

LONG ANSWER QUESTIONS

23. (i) Inorganic impurities – nitrates, phosphates and metals.
(ii) Organic impurities – fruit and vegetable wastes, oil, urea, human faeces, animal waste, pesticides and herbicides.
24. **Hint:**
(i) Sewage – mixture of wastewater coming out of homes and other places.
(ii) Sewers – pipes which carry sewage.
(iii) Sewerage – network of sewage carrying pipes.
25. large, water, ground, ground, handpumps, water, cholera.
26. **Hint:** See pages 223 and 224 of Chapter 18 of NCERT Science textbook for Class VII.
27. **Hint:** Some points are given here, you can add more.
(i) Do not throw used tea leaves, solid food remains, etc. in the drain. Throw them in the dustbin.
(ii) Chemicals like medicines, paints, insecticides, etc. should not be thrown in the drain, as they increase the pollution load of the sewage.