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

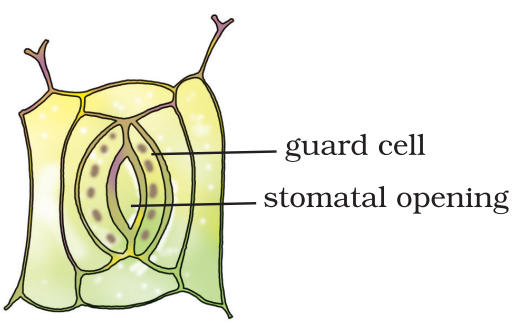
11. The plant survived on the food stored in the stem and roots.

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. 

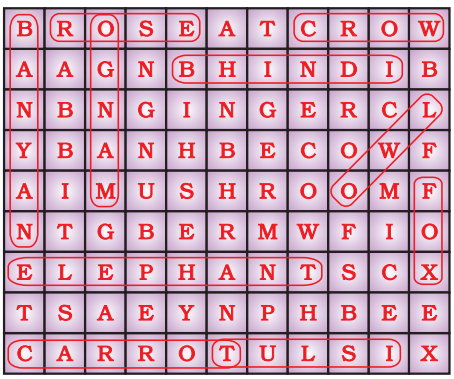
LONG ANSWER QUESTIONS

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.)



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)

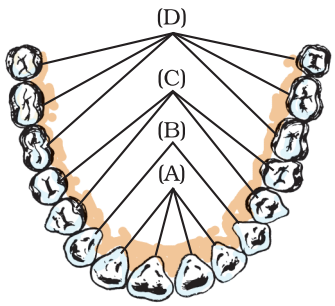
23. Hint (to digest the food completely.)

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



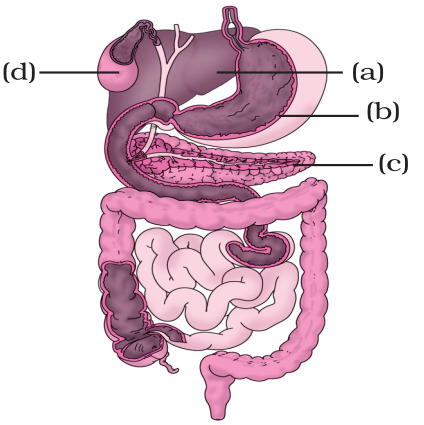
27. (a) Liver
(b) Insolubility of fat in water.
(c) Breaks down big fat droplets into smaller droplets.
(d) Small intestine
(e) No

28. (a) Liver

(b) Stomach

(c) Pancreas

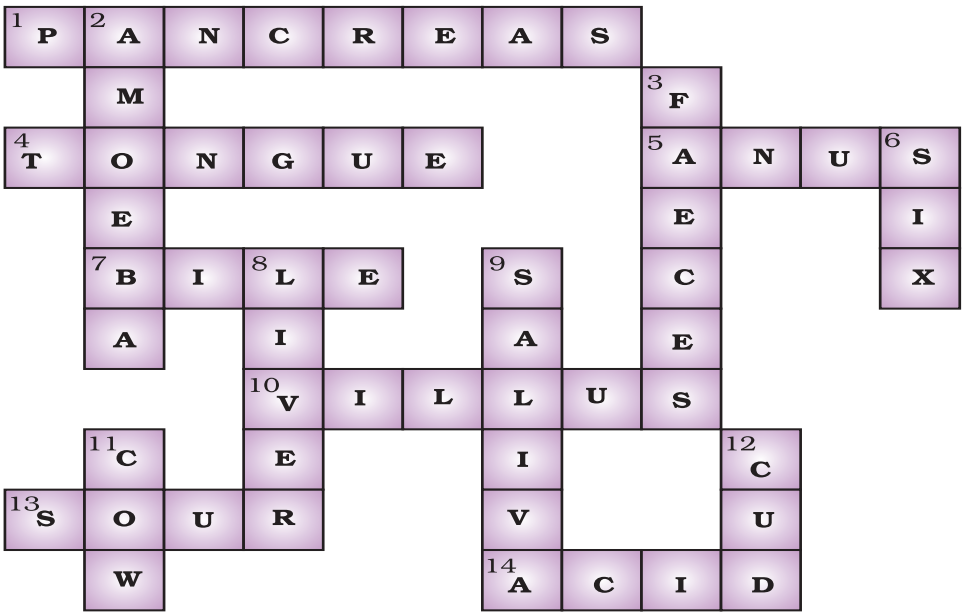
(d) Gall bladder



29. Children have 28 teeth in their mouth. There are only four molars in each jaw and not six. Adults have six molars in each jaw.

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

30.



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 yarm.

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 $\longrightarrow$ Convection

T $\longrightarrow$ 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.

17. The effect of an ant bite can be neutralised by rubbing moist baking soda.

18. (a) (iii); (b) (v); (c) (iv); (d) (i); (e) (ii)

19. (a) sour, acids (b) natural
(c) pink (d) neutralise, salt

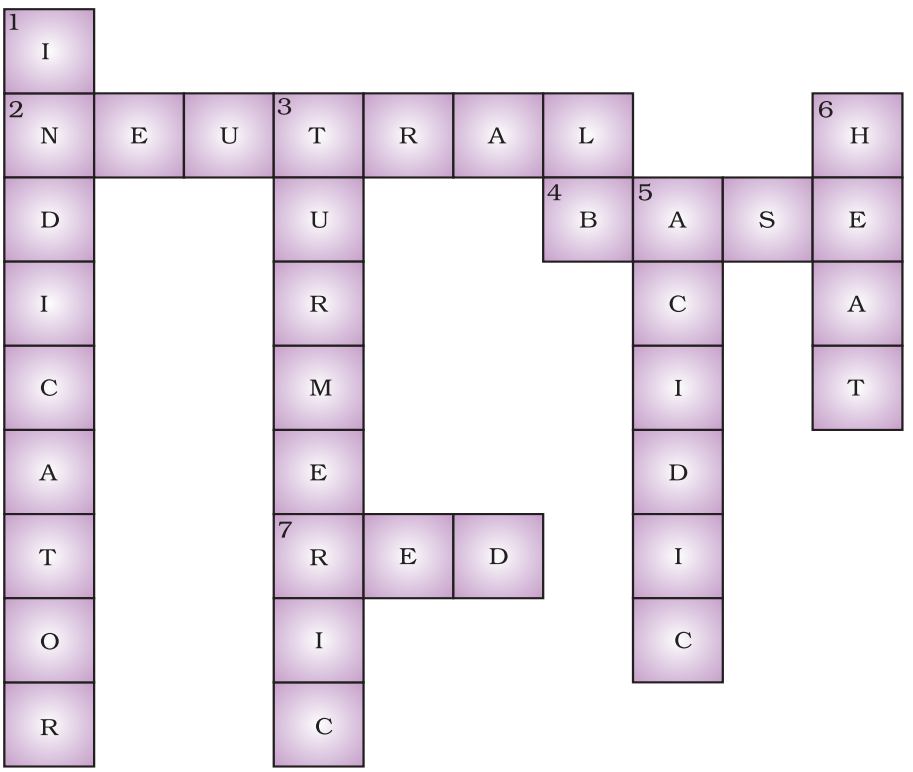
LONG ANSWER QUESTIONS

20. 'A' is an acidic solution.

'B' is a basic solution.

'C' is a neutral solution.

21.



22. **Hint:** If the soil is too acidic, it is treated with bases such as quick lime (calcium oxide) or slaked lime (calcium hydroxide).

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 phenophthalein 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 → Iron oxide
(2) Copper sulphate + Iron → 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) Copper sulphate + Iron $\longrightarrow$ Iron Sulphate + Copper

blue green brown

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

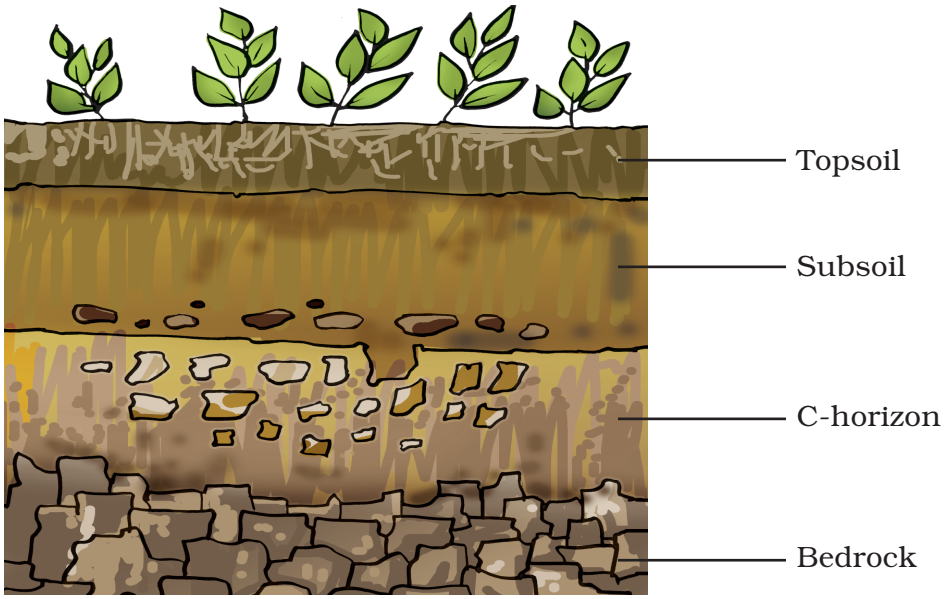
9. Situation 'B' is advantageous to plants because A- and B- horizons are rich in water, minerals and humus.

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.

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	O	M	A	I
N	N	N	T	L	S	G	H	Y	O
G	K	T	H	O	R	I	Z	O	N

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.

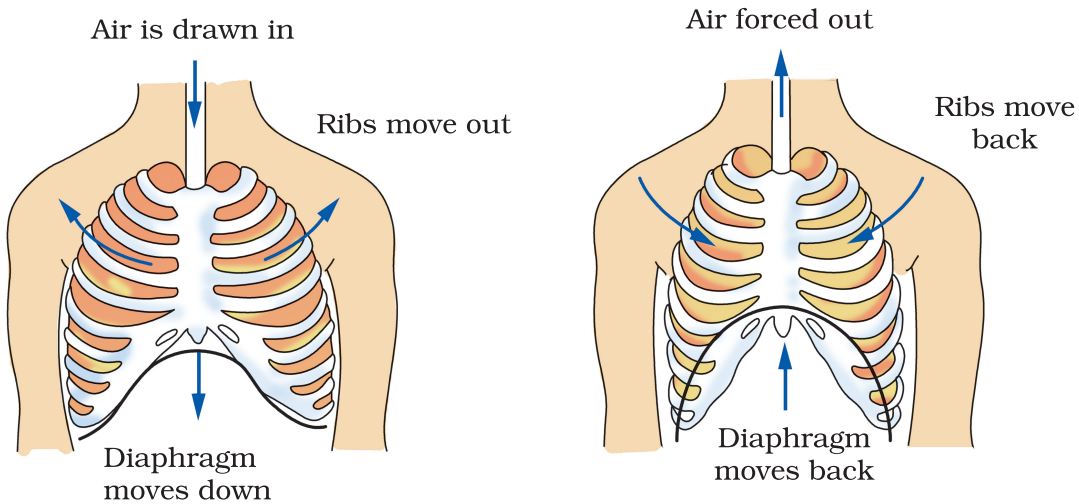
17. (a) Exhalation process during respiration.
(b) The lime water in test tube 'B' turns milky but water in tube 'A' remains unchanged. Because CO_2 is present in the exhaled air, it mixes with lime water in 'B' and turns it milky.

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)



(A) (*Inhalation*) (B) (*Exhalation*)

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

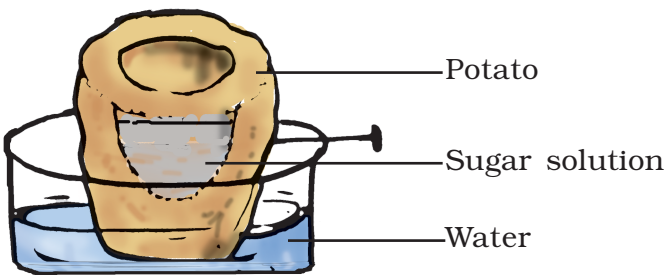
7. Blood flow in arteries is rapid and at a high pressure. Also arteries have thick elastic walls.

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.

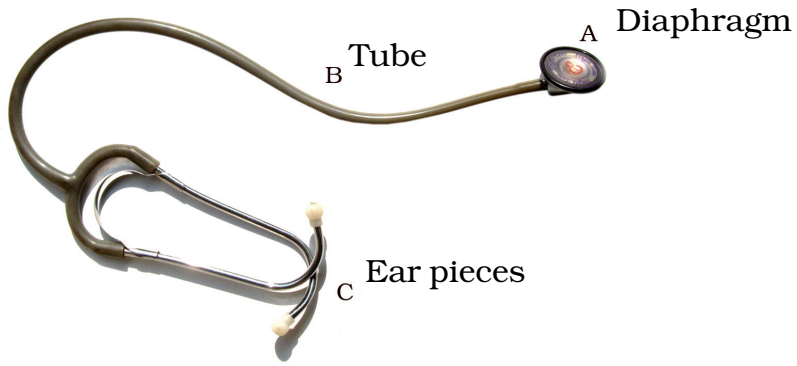
14. (a) In dialysis, blood is filtered periodically through an artificial kidney.
(b) In the event of kidney failure.

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.

(b)



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.

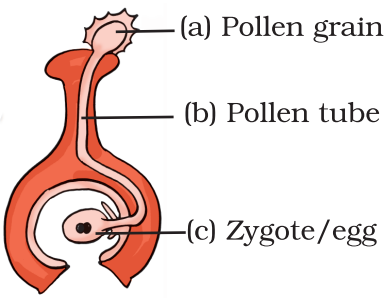
10. Branch.

11. It shows self pollination.

12. The seeds from the tree may have fallen below and germinated into small plants.

SHORT ANSWER QUESTIONS

13.



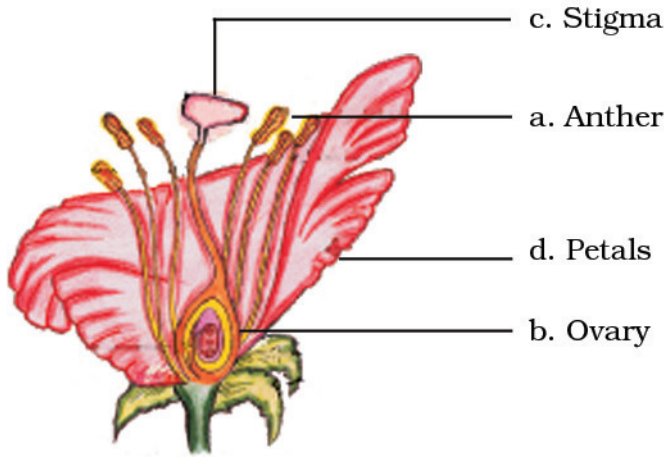
14. (a) It is bread mould, a fungus.
(b) They develop from spores.

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.

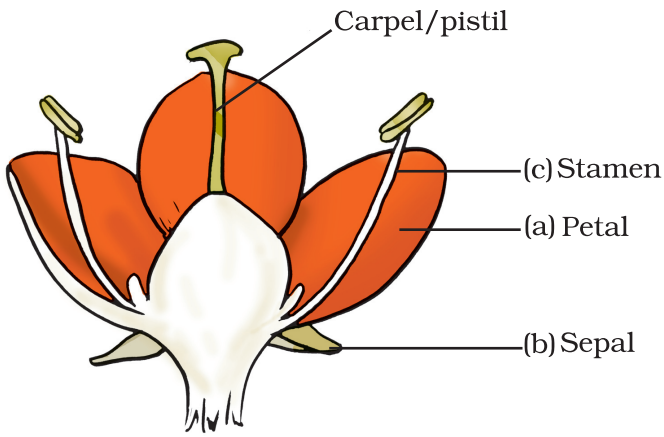
LONG ANSWER QUESTIONS

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

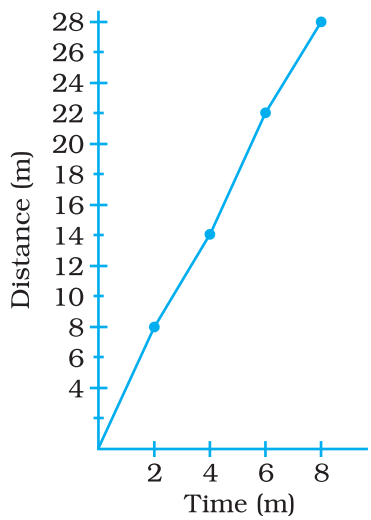
13.

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

14. 12 years 3 months
= 12 × 365 + 3 × 30 = 4470 days
= 4470 × 24 × 60 × 60 s = 386208000 s

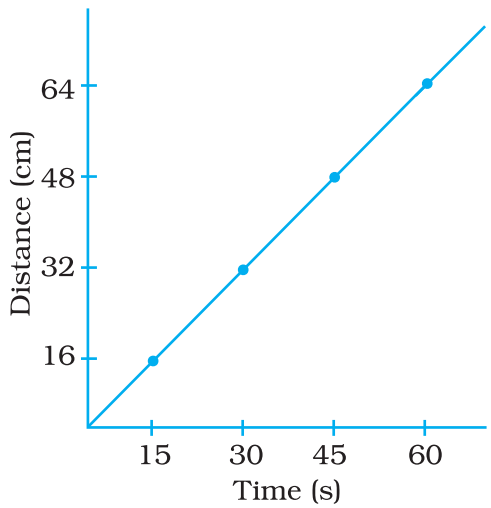
15. 10 km/s

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 electomagnet will attract more pins as it has more number of turns of wire on it and thus a stronger electromagnet.

LONG ANSWER QUESTIONS

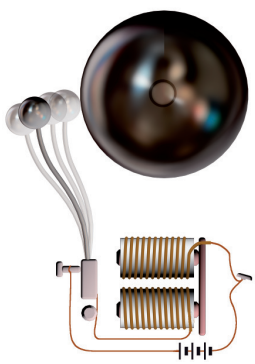
17. Some of the questions can be
    (i) Why does the nail attract the pins?
    (ii) What will happen if we connect more cells in the circuit?
    (iii) What will happen if we use some other material like a straw in place of the nail?
    (iv) What will happen if we wrap the wire on the nail more tightly?

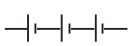
    or

    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) 
    (ii) 
    (iii) 
    (iv) 

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 csoloured 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.