

**CBSE**  
**Class VI Science**

**Time: 2 ½ hrs**

**Total Marks: 80**

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**General Instructions:**

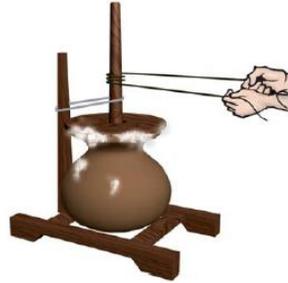
1. The question paper consists of 34 questions and is divided into four sections, A, B, C and D
  2. All questions are compulsory.
  3. Section A comprises question numbers 1 to 15. These are multiple choice questions carrying one mark each. You are to select one most appropriate response out of the four provided options.
  4. Section B comprises question numbers 16 to 22. These are SAQs carrying two marks each.
  5. Section C comprises question numbers 23 to 31. These are SAQs carrying four marks each.
  6. Section D comprises question numbers 32 to 34. These are SAQs carrying five marks each.
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**SECTION-A**

1. The botanical name of touch-me-not plant is [1]  
(a) *Mimosa*  
(b) *Bryophyllum*  
(c) Daffodils  
(d) Jasmine
  
2. Which one of the following animals reproduce by giving birth to young ones? [1]  
(a) Frog  
(b) Giraffe  
(c) Turtle  
(d) Crocodile
  
3. Which of the following structures is not present in the alimentary canal of red worms?[1]  
(a) Crop  
(b) Gizzard  
(c) Stomach  
(d) Teeth

4. Which of the following is not a form of precipitation? [1]
- (a) Rain
  - (b) Hail
  - (c) Snow
  - (d) River

5. Shown below is the technique used to separate butter from milk. What is this technique called? [1]



- (a) Winnowing
  - (b) Hand picking
  - (c) Churning
  - (d) Sieving
6. The liquid obtained after filtration is called [1]
- (a) Residue
  - (b) Filtrate
  - (c) Supernatant
  - (d) Solution
7. A metal surface which is freshly rubbed and cleaned using a sand paper is [1]
- (a) Lustrous
  - (b) Non-lustrous
  - (c) Black
  - (d) Brown
8. Photosynthesis takes place during [1]
- (a) The night only
  - (b) The day only
  - (c) The whole day
  - (d) Noon only
9. Name the part of the jute plant from which jute is obtained. [1]
- (a) Leaf
  - (b) Root
  - (c) Fruit
  - (d) Stem

10. Which of the following are battery powered electric appliances? [1]

Refrigerator, Torch, Mobile Phone, Washing Machine

- (a) Refrigerator and Torch
- (b) Torch and Mobile Phone
- (c) Mobile Phone and Washing Machine
- (d) Refrigerator and Washing Machine

11. The internal circuit of a torch consists of a cell, a key and a bulb connected with wires. What happens when the bulb is switched on? [1]

- (a) Key gets closed, current does not flow and the bulb glows.
- (b) Key gets closed, current flows and bulb glows.
- (c) Key gets open, current flows and the bulb glows.
- (d) Key gets open, current does not flow and the bulb does not glow.

12. Which of the following diagrams is correct? [1]



- (a) (i)
- (b) (ii)
- (c) Both (i) and (ii)
- (d) None

13. In the following, which one is the longest distance? (1)

- (a) Delhi to Mumbai
- (b) New Delhi to New York
- (c) Your home to the market
- (d) Earth to Moon

14. A block of magnet is kept with its North Pole facing the top and South Pole at the bottom, as shown in the given figure. [1]



Another special magnet of a relatively small size is dropped on top of the block magnet. It is observed that the two magnets do not come in contact with each other. Which diagram shows the exact positions of the poles on the special magnet?

(a)



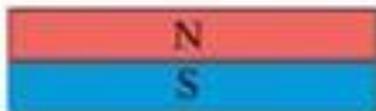
(b)



(c)



(d)



15. The given table lists the number of steel chips which can be attracted by four different magnets. The magnetic strength of which magnet is the maximum? [1]

Magnet	Number of steel chips
I	26
II	38
III	27
IV	37

- (a) I
- (b) II
- (c) III
- (d) IV

### SECTION-B

16. Give reasons for the following: [2]

- i. Fishes have streamlined body shape.
- ii. Fishes cannot survive outside water.

17. People in many places carelessly throw plastic bags on roads. How will this pose a problem for drains and sewer systems? [2]

18. What will happen if the saturated solution of a substance in water is (i) heated, and (ii) cooled? [2]

19. Write any 2 points of difference between transparent and opaque materials. [2]

20. How will you test the presence of starch in food? [2]

21. Identify the symbols. [2]

i.



ii.



22. An eraser is one fifth the length of a pencil. A pencil is twice the length of a compass. If the length of the compass is 7.5 cm, what is the length of the eraser? [2]

### SECTION-C

23. [4]

(a) Separate the following garbage into two groups: Those which do not rot and those which rot when buried.

Dried leaves, leftover food, plastic toys, egg shells, glass jar, aluminium wrappers

(b) How is compost useful for plants?

24. [4]

(a) Discuss ways of minimizing generation of plastic waste.

(b) Why it is better to use compost as manure instead of chemical fertilizers?

25. [4]

(a) Name the respiratory organs in the following organisms:

i. Earthworm

ii. Fish

iii. Plant

iv. Human

(b)

i. Write two ways in which plants carry out excretion?

ii. Eggs of birds and seeds of plants help to carry out which important process of life?

26. [4]

(a) Define solubility?

(b) State two examples of gases dissolved in water.

(c) What will be the effect of temperature on solubility of gases in water? State its consequences.

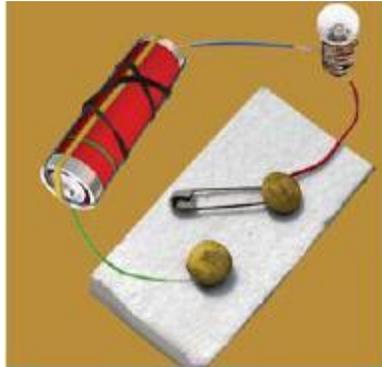
27. Explain why burning of paper and formation of curd from milk are said to be irreversible changes whereas boiling of water and melting of coal tar on heating are considered reversible changes. [4]

28. [4]

(a) Why do sea divers carry oxygen gas cylinders along with them while going deep into water?

(b) With the help of an experiment, show that water contains dissolved air in it?

29. [4]  
(a) Why does the bulb not glow when the safety pin is not in touch with the other drawing pin?



- (b) Select the insulators and conductors from among the following materials: Plastic scale, rubber, aluminium foil, thermocol.
30. [4]  
(a) What happens when the North Pole of a magnet is placed near the North Pole of another magnet?  
(b) Name four different types of magnets.
31. [4]  
(a) How does a torch cell help its bulb to glow?  
(b) Why does a bulb get fused? Give reasons.

#### SECTION-D

32. Answer the following: [5]  
(a) Example of a plant which can reproduce from a bud.  
(b) A life characteristic which is essential for the continuity of the species of a living organism.  
(c) Example of a plant which can reproduce through cutting.  
(d) The process of getting rid of body wastes by living organisms.  
(e) An example of a plant responding to stimuli.
33. [5]  
(a) State the composition of air in terms of percentage of its various components.  
(b) To show that about one-fifth of air is oxygen and the rest four-fifth is nitrogen.
34. [5]  
(a) How were natural magnets discovered?  
(b) Select the non-magnetic material from among the following: Plastic, iron, nickel, fabric, leather, wood.

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**Solution**

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**SECTION A**

1. **(d)**  
The botanical name of touch-me-not plant is *Mimosa*.
2. **(b)**  
Giraffe reproduces by giving birth to young ones.
3. **(d)**  
Teeth are not present in the alimentary canal of red worms.
4. **(d)**  
River is not a form of precipitation as the water does not reach the Earth by this water body. All the others are ways by which water reaches the Earth's surface.
5. **(c)**  
Churning is the process used to separate butter from buttermilk.
6. **(b)**  
The liquid obtained after filtration is called the filtrate.
7. **(a)**  
A metal surface which is freshly rubbed and cleaned using a sand paper is lustrous. This is because all the dust, impurities and substances formed on the surface are removed, and the shiny surface of the metal appears.
8. **(b)**  
Photosynthesis takes place only during the day.
9. **(d)**  
The jute fibre is obtained from the stem and ribbon (outer skin) of the jute plant.
10. **(b)**  
Torch and Mobile Phone are battery powered electric appliances.
11. **(b)**  
When the bulb is switched on, the key gets closed, current flows and the bulb glows.

**12. (a)**

In an electric circuit, the direction of current is taken to be from the positive to the negative terminal of the electric cell as shown in Fig (i)

**13. (d)**

Earth to Moon

**14. (d)**

As the two magnets do not touch each other, it means that the lower portion of the dropped material should be of the same polarity as the top one.

**15. (b)**

Magnet II has maximum strength as it attracts maximum number of steel chips.

**SECTION B**

**16.**

- i. The streamlined body shape (boat shape) allows the fish to move easily in water.
- ii. This is because fishes have gills which help them to use the oxygen dissolved in water. Gills are unable to absorb atmospheric oxygen, due to which the fish will die when removed out of water.

**17.** Plastic bags thrown away carelessly on roads and other places get into drains and the sewer system. As a result, drains get choked and sewage water spills on the roads. During heavy rains, it might even create a flood like situation.

**18.** If the saturated solution of a substance at a particular temperature is heated to a higher temperature, then the solubility of the substance increases and more of substance can be dissolved in it.

If the saturated solution of a substance at a particular temperature is cooled to a lower temperature, then the solubility of the substance decreases and some of the dissolved substance will precipitate out in the form of solid crystals.

**19.**

<b>Transparent Materials</b>	<b>Opaque Materials</b>
(1) Materials through which we are able to see clearly are called transparent materials	(1) Materials through which we are not able to see are called opaque materials.
(2) Example: Glass, water	(2) Example: Wood, book

**20.** Test to detect the presence of starch in food:

- (i) Take a small quantity of food to be tested.
- (ii) Add 2–3 drops of iodine solution to the food item with the help of a dropper.
- (iii) Observe for colour change, if any. The presence of a blue–black colour indicates the presence of starch in the food item.

**21.**

- i. Switch 'Off' or open switch
- ii. Switch 'On' or closed switch

**22.**

$$\begin{aligned}\text{Length of pencil} &= 2 \times \text{length of compass} \\ &= 2 \times 7.5 \text{ cm} = 15 \text{ cm}\end{aligned}$$

$$\begin{aligned}\text{Now, length of eraser} &= \text{length of pencil} / 5 \\ &= 15 \text{ cm} / 5 \\ &= 3 \text{ cm}\end{aligned}$$

### **SECTION C**

**23.**

(a) Garbage which does not rot when buried in the soil - plastic toys, glass jar, aluminium wrappers.

Garbage which rots when buried in the soil - Dried leaves, leftover food, egg shells.

(b) Some materials of garbage rot and get converted into compost which acts as manure for plants. This compost when mixed with soil provides nutrients to the plants.

**24.**

(a) Ways of minimizing generation of plastic waste:

- i. We should make minimum use of plastic bags.
- ii. We should carry a cloth or a jute bag when we go out for shopping.
- iii. We should not use plastic bags to store eatables.
- iv. We should not put garbage in plastic bags and throw it away.

(b) It is better to use compost as manure than chemical fertilizers because:

- i. Making compost is cheap whereas making of chemical fertilizers is very expensive.
- ii. Compost is natural manure which does not harm the soil but chemical fertilizers are man-made chemicals which harm the soil in long run.

**25.**

(a)

- i. Skin
- ii. Gills
- iii. Tiny pores in leaves
- iv. Lungs

(b)

- i.
  1. Some plants store the waste products within their parts in a way that they do not harm the plant as a whole.
  2. Some plants remove waste products as secretions.
- ii. Reproduction

**26.**

(a) The maximum amount of solute which can be dissolved in a given amount of solvent at a specific temperature is called solubility.

(b)

- i. All aerated drinks contain dissolved carbon dioxide.
- ii. Aquatic animals survive on the oxygen dissolved in water.

(c) The solubility of gases in water decreases with a rise in temperature.

During summer season, fishes in shallow ponds die because the water in the pond gets warm due to summer heat and as a result, the amount of dissolved oxygen in water decreases.

**27.** Burning of a paper is an irreversible change. During the burning of paper, ash and smoke is produced. This ash and smoke cannot be converted back to the original paper, so it is an irreversible change.

When a small quantity of curd is added to warm milk, the milk is then stirred and kept aside for a few hours, it changes into curd. This change involves a chemical reaction, i.e. fermentation. This curd cannot be converted back into milk and hence it is an irreversible change.

When water is boiled, it changes into steam. When this steam is cooled, water is formed again (condensation). So, the changing of water into steam can be reversed by cooling. Thus, boiling of water is a reversible change.

When coal tar is heated, it melts to form a thick black liquid which is used in making and repairing roads. When this hot molten coal tar gets cooled, it solidifies again to form coal tar. Hence, the melting of coal tar is a reversible change.

**28.**

(a) Sea divers carry oxygen gas cylinders along with them because there is no free oxygen in the sea water. The little dissolved oxygen present in water cannot be used for breathing by sea divers unlike aquatic animals.

(b) Activity: Take some water in a glass vessel or a beaker. Heat it slowly using a burner on a tripod stand. Before the water begins to boil, look carefully at the inner surface of the vessel. Tiny bubbles will be seen on the inside of the vessel. These bubbles are of air dissolved in water.

On heating water, the solubility of air in it decreases due to which air dissolved in water escapes in the form of tiny bubbles. This shows that air is dissolved in water.

**29.**

(a) The bulb does not glow when the safety pin is not in touch with the other drawing pin because the circuit is not complete due to a gap between the two drawing pins. Hence the switch is said to be 'off'.

(b) Insulators: Plastic scale, rubber and thermocol.  
Conductor: Aluminium foil.

**30.**

(a) Like poles repel each other while unlike poles attract each other. Hence, both the magnets will repel each other in this case.

(b) Bar magnet, horse-shoe magnet, cylindrical magnet and button magnet.

**31.**

(a) The cell passes an electric current through the torch bulb which heats up its filament and makes the bulb glow.

(b) A bulb may get fused due to normal wear and tear of the filament or when too much electricity is passed through it suddenly.

#### **SECTION D**

**32.**

(a) Potato

(b) Reproduction

(c) Rose plant

(d) Excretion

(e) Closing of flowers of certain plants after sunset / Folding of leaves of mimosa plant when touched.

33.

(a) Composition of air-

Nitrogen - 78%

Oxygen - 21%

Water vapour, carbon dioxide, other gases and dust particles - 1%

(b) Activity: To show that about one-fifth of air is oxygen and the rest four-fifth is nitrogen.



- i. Take a trough and place a gas jar stand in it. Fix a candle on the gas jar stand and fill half the trough with water.
- ii. Light the candle with a matchstick and cover the burning candle by placing an inverted gas jar over it.
- iii. After a short time, the candle stops burning and water rises up in the gas jar to a certain level. The candle gets extinguished because all the oxygen present in air contained in the gas jar was used up by the burning candle.
- iv. When the candle burns, then oxygen of air in the gas is used up and carbon dioxide gas is formed. This carbon dioxide gas ( $\text{CO}_2$ ) formed is absorbed by the sodium hydroxide solution present in the trough. The absorption of  $\text{CO}_2$  gas by  $\text{NaOH}$  solution creates a vacuum in the gas jar. Hence, water rises up in the gas jar to fill this vacuum.
- v. Water in the gas jar rises to about one-fifth part of the volume of air initially present in the gas jar. The volume of water rise in the gas jar is equal to the volume of oxygen present in the air in the gas jar which was used up during the burning of candle. Hence, we conclude that about one-fifth of air is oxygen. The major part of air which is not used up for burning of candle and remains behind in the gas jar is nitrogen. Since water does not rise in the remaining four-fifth part of the gas jar, it proves that about four-fifths part of air is nitrogen.

**34.**

(a) Once there was a shepherd named Magnes, who used to take his herd of sheep and goats to the near-by mountains for grazing. He would take a stick with him to control his herd. The stick had a small piece of iron attached at one end. One day he was surprised to find that he had to pull hard to free his stick from a rock on the mountainside. It seemed as if the stick was being attracted by the rock. The rock was a natural magnet and it attracted the iron tip of the shepherd's stick. This led to the discovery of natural magnets.

(b) Plastic, fabric, leather and wood.