

## GENERAL INSTRUCTIONS

---

Attempt all the questions and follow the instructions given in each question.

Q. No. 1 is MCQs type, choose the correct option.

Q. No. 2 are Very Short Answer Type Questions, carry one mark each.

Q. No. 3 to Q. No. 9 are Short Answer Type Questions-I, carry 2 marks each.

Q. No. 10 to Q. No. 19 are also Short Answer Type Questions-II, carry 3 marks each.

Q. No. 20 to Q. No. 23 are Long Answer Type Questions, carry 5 marks each

---

## Multiple Choice Type Questions

- 1. Choose the correct option:** **[1 mark each]**  
**[1 x 10 = 10]**
- (i) A ball rolling along the ground gradually slows down and finally comes to rest is an example of  
(a) Muscular force  
(b) Magnetic force  
(c) Frictional force  
(d) Electrostatic force
- (ii) Sound can travel through  
(a) Solids only  
(b) liquids only  
(c) Gases only  
(d) solids, liquids and gases.
- (iii) Which of the following is not a way to conserve water?  
(a) replace  
(b) reduce  
(c) reuse  
(d) recycle
- (iv) The use of manure (which is not correct):  
(a) Enhances the water holding capacity of the soil  
(b) Improves soil texture  
(c) Increases the number of friendly microbes  
(d) Also becomes a source of water pollution

- (v) Which is the plant disease caused by micro-organism?  
(a) Measles  
(b) Small pox  
(c) Citrus Canker  
(d) Polio
- (vi) Rayon is obtained by  
(a) Petroleum products  
(b) Fully synthetic method  
(c) Chemical treatment of wood pulp  
(d) All methods
- (vii) Sodium metal is stored in  
(a) Oil  
(b) Petrol  
(c) Kerosene  
(d) Diesel
- (viii) The world's first oil well was drilled in:  
(a) USSR  
(b) USA  
(c) India  
(d) UK
- (ix) Which among the following is considered as the cleanest fuel?  
(a) Cow dung cake  
(b) Kerosene  
(c) Petrol  
(d) Hydrogen gas
- (x) Which of the following is not a cell?  
(a) RBC  
(b) Bacterium  
(c) Spermatozoa  
(d) Virus

### Very Short Answer Type Questions

[1 mark each]

2. Give a suitable word for each of the following statements :

- (i) Chemicals which control changes at adolescence stage. [1]
- (ii) Force exerted by a magnet on a piece of iron. [1]
- (iii) The substance that reduces friction. [1]

- |             |   |            |
|-------------|---|------------|
| <b>(iv)</b> | The characteristic of sound that determines loudness. | <b>[1]</b> |
| <b>(v)</b>  | Device used to check current.                         | <b>[1]</b> |
| <b>(vi)</b> | The Brightest star in the sky located close to Orion. | <b>[1]</b> |

### Short Answer Type Questions-I

**[2 mark each]**

- |           |  |                |
|-----------|--|----------------|
| <b>3.</b> | Who discovered the first antibiotic? Name any two antibiotics.   | <b>[1 + 1]</b> |
| <b>4.</b> | Write any two properties of nylon.   | <b>[2]</b>     |
| <b>5.</b> | What is carbonization?   | <b>[2]</b>     |
| <b>6.</b> | When kerosene oil is heated a little, it will catch fire. But when wood is heated a little, it does not catch fire. Why? | <b>[2]</b>     |
| <b>7.</b> | What is desertification?   | <b>[2]</b>     |
| <b>8.</b> | Draw a diagram of Amoeba. Name the locomotory organ in it.   | <b>[2]</b>     |
| <b>9.</b> | Write difference between viviparous and oviparous animals.   | <b>[1 + 1]</b> |

### Short Answer Type Questions-II

**[3 mark each]**

- |            |  |                    |
|------------|--|--------------------|
| <b>10.</b> | Name the disease or side effects caused by deficiency of following hormones :<br><b>(a)</b> Thyroxine<br><br><b>(b)</b> Insulin<br><br><b>(c)</b> Adrenaline   | <b>[3]</b>         |
| <b>11.</b> | What does frictional force exerted on an object in a fluid depend on?  | <b>[3]</b>         |
| <b>12.</b> | What happens when electricity is passed through ordinary water?  | <b>[3]</b>         |
| <b>13.</b> | The oviducts of a woman are blocked. So doctor advised her for IVF.<br><br><b>(a)</b> What is the full form of IVF?<br><br><b>(b)</b> Why IVF is suggested to the woman? Justify.<br><br><b>(c)</b> What do you call these babies born through this technique. | <b>[1 + 1 + 1]</b> |

14. What are the advantages of manure? [3]
15. Explain the various shapes of bacteria. [3]
16. What is rayon? Why is it called artificial silk? What are the uses of rayon? [1+1+1]
17. Saloni took a piece of burning charcoal and collected the gas evolved in a test tube. [1+2]
- (i) How will she find the nature of the gas?
- (ii) Write down word equations of all reactions taking place in this process.
18. Make a labelled diagram of a candle flame. [3]
19. What will happen if : [1+1+1]
- (i) we go on cutting trees?
- (ii) the habitat of an animals is disturbed?
- (iii) the top layer of soil is exposed?

### Long Answer Type Questions

20. Explain traditional ways of purifying water to make it fit for drinking. [5 marks each] [5]
21. Describe the 'Green House Effect' in your own words. [5]
22. Draw sketches to show the relative positions of prominent stars in (i) Ursa Major and (ii) Orion. [5]
23. Write Do's and Don'ts during a thunderstorm. [5]

## Solutions

### Multiple Choice Type Questions

[1 mark each]

- 1.
- |        |  |     |
|--------|--|-----|
| (i)    | (c) Frictional force                         | [1] |
| (ii)   | (d) Solids, liquids and gases.               | [1] |
| (iii)  | (a) replace                                  | [1] |
| (iv)   | (d) Also becomes a source of water Pollution | [1] |
| (v)    | (c) Citrus Canker                            | [1] |
| (vi)   | (c) Chemical Treatment of wood pulp          | [1] |
| (vii)  | (c) Kerosene                                 | [1] |
| (viii) | (b) USA                                      | [1] |
| (ix)   | (d) Hydrogen Gas                             | [1] |
| (x)    | (d) Virus                                    | [1] |

### Very Short Answer Type Questions

[1 mark each]

- 2.
- |       |                |     |
|-------|----------------|-----|
| (i)   | Hormones       | [1] |
| (ii)  | Magnetic force | [1] |
| (iii) | Lubricants     | [1] |
| (iv)  | Amplitude      | [1] |
| (v)   | Tester         | [1] |
| (vi)  | Sirius.        | [1] |

### Short Answer Type Questions-I

[2 marks each]

3. Alexander Fleming discovered first antibiotic *penicillin*. Two other common antibiotics are *streptomycin* and *tetracycline*. [2]
4. (i) Nylon fibres are strong, elastic and light [1+1]
- (ii) They are easy to wash and lustrous.
5. As coal contains mainly carbon, the slow process of conversion of dead vegetation into coal is called carbonization. [2]

6. If kerosene oil is heated a little, it catches fire. But if wood is heated a little, it does not catch fire because ignition temperature of kerosene oil is lower than that of wood. [2]

7. Removal of top layer of soil exposes the lower, hard and rocky layers. This soil has less humus and is less fertile. Gradually the fertile land gets converted into desert. It is called desertification. [2]

8.

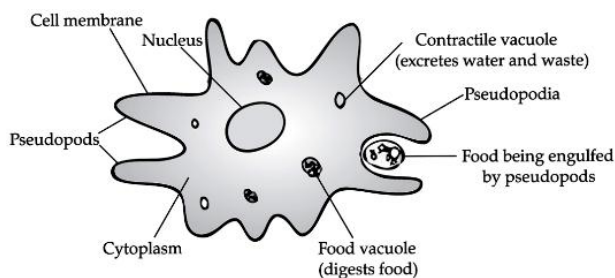


Fig. Amoeba

[1 + 1]

The locomotory organ in Amoeba is pseudopodia.

9. Difference between viviparous and oviparous animals : [1 + 1]

Viviparous Animals	Oviparous Animals
The animals that give birth to young ones are called viviparous animals. e.g., Human beings, Cats, Dogs.	The animals that lay eggs are called oviparous animals. e.g., Frogs, fishes.

## Short Answer Type Questions-II

[3 marks each]

10. (a) Thyroxine is produced by thyroid gland. Its deficiency causes 'goiter' disease. [1]

(b) A person suffers from diabetes, if pancreas does not produce the hormone insulin in sufficient quantities. [1]

(c) Adrenal glands produce hormone adrenaline, which helps the body to adjust to stress, when a person is very angry, embarrassed or worried. [1]

11. Frictional force on an object in a fluid depends on the speed with respect to the fluid and the nature of fluid. It also depends on the shape of the object, e.g., all vehicles are designed to have shapes that reduce fluid friction. [3]

**12.** When the two terminals of battery are combined with negative and positive electrodes which are immersed in water, the water is dissociated into its components oxygen and hydrogen. Oxygen is collected on positive electrode and hydrogen is collected on negative electrode. [3]

**13.** (a) The full form of IVF is in vitro fertilisation (fertilisation outside the body). [1]

(b) IVF is suggested to the women because she is unable to bear babies because sperms cannot reach the egg for fertilisation. So, in this case doctors advised the woman for IVF. Where freshly released egg and sperms are kept together for few hours in vitro conditions in a test tube or any other apparatus.

[1]

(c) If in the case, fertilisation occurs, the zygote is allowed to develop for about a week and then it is placed in the mother's uterus. Complete development takes place in the uterus and the baby is born like any other baby. This technique is called as test tube babies. This term is actually misleading because babies cannot grow in test tubes.

[1]

**14.** Advantages of manure :

(i) It enhances the water holding capacity of the soil.

(ii) It makes the soil porous due to which exchange of gases becomes easy.

(iii) It increases the number of friendly microbes.

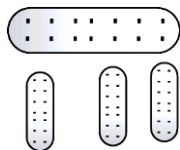
(iv) It improves the texture of the soil.

(Any three) [1 x 3]

**15.** The bacteria are classified into three types on the basis of their shape :

(a) Rod shaped (Bacillus):

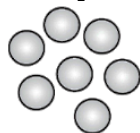
**Example:** *Lactobacillus*



[1]

(b) Round shaped (Coccus):

**Example:** *Streptococcus*



[1]

(c) Spiral shaped

**Example:** *Treponema*

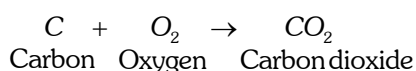


[1]

16. Rayon is synthetic fibre having properties similar to those of silk. So, it is called artificial silk. It is obtained by chemical treatment of wood pulp. Rayon is a man-made fibre. It resembles silk, but it is cheaper than silk. It is mixed with cotton to make bed sheets, or mixed with wool to make carpets. [1+1+1]

17. (i) When charcoal is burnt, carbon dioxide gas is produced. This gas turns lime water milky. The nature of the gas can be tested by using moist red and blue litmus paper. No effect on red litmus but the gas turns blue litmus to red, so it is acidic in nature. [1]

(ii) Equations of all the reactions are:

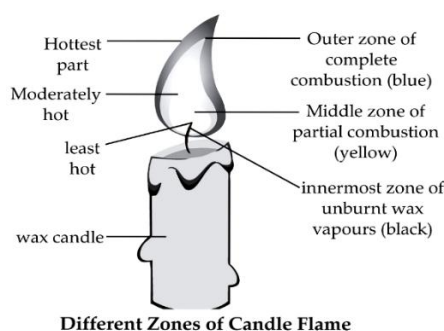


Carbon dioxide + Lime water  $\rightarrow$  Milky

Carbon dioxide + Blue Litmus (moist)  $\rightarrow$  Red

[2]

18.



19. (i) If we go on cutting trees, we will face the problem of food, wood, shelter etc. Also, the cutting of trees leads to the decrease in level of oxygen and also causes global warming. [1]

(ii) If the habitat of an animal is disturbed, the animal will face extinction and survival becomes very difficult for it [1]

(iii) The exposed layer has less humus and is less fertile. Gradually the fertile land gets converted into deserts. It is called deforestation. [1]

## Long Answer Type Questions

[5 marks each]

20. The traditional ways of purifying water to make it fit for drinking are as follows :

(i) By filtering: This is a physical method of removing impurities. A popular household filter is a candle type filter. [1]

(ii) By boiling: When water is heated, it boils at a temperature of  $100^{\circ}\text{C}$ . At this high temperature, all the harmful micro-organisms or germs present in water are killed and it becomes absolutely safe for drinking. Many households use boiling as a method for obtaining safe drinking water. [2]



(iii) Chlorination: It is commonly used chemical method for purifying water. It is done by adding chlorine tablets or bleaching powder to the water.

[2]

21. After the Sun's rays pass through the atmosphere, they warm the earth's surface. A part of the radiation that falls on the earth is absorbed by it and a part is reflected. The radiations which are trapped by the atmosphere are not allowed to go out of the earth's atmosphere. These trapped radiations further warm the earth. As in a nursery, sun's heat is allowed to get in but is not allowed to go out of the green house. The trapping of radiations by the earth's atmosphere performs a similar function. That is why it is called the greenhouse effect. Without this process, life would not have been possible on the earth because of the low temperatures.  $\text{CO}_2$  is one of the gases responsible for this effect.

[5]

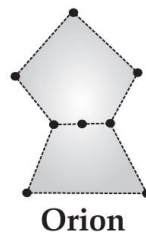
22. (i) **Ursa Major:** There are seven prominent stars in this constellation. They appear like a big ladle or a question mark. There are three stars in the handle of the ladle and four in its bowl.

[2½]



(ii) **Orion:** Orion is another well-known constellation that can be seen during winter in the late evenings. It is one of the most magnificent constellations in the sky. It also has seven or eight bright stars. Orion is also called the hunter. The three middle stars represent the belt of the hunter. The four bright stars appear to be arranged in the form of a quadrilateral.

[2½]



23. **Outside the house :**

(i) Open vehicles, such as motor bikes, tractors, construction machinery and open cars are not safe.

(ii) Open fields, tall trees, shelters in park, elevated place do not protect us from lightning strokes.

(iii) Carrying an umbrella is also not safe.

(iv) Stay away from poles or other metal objects.

[2½]

**Inside the house:**

(i) During a thunderstorm contact with telephone cords, electrical wires and metal pipes should be avoided.

(ii) Bathing should be avoided.

(iii) Electrical appliances like computers, TVs etc. should be unplugged. Electrical lights can remain on.

[2½]