

Sample Paper - 5

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 mark each]

1. Choose the correct options :

[1×1 = 10]

(i) Sulphurous acid turns blue litmus paper into:

- (a) Blue
- (b) Red
- (c) Neutral
- (d) No reaction

(ii) Petroleum was formed from organisms:

- (a) Living on the land
- (b) Living in the sea
- (c) Living on the plants
- (d) Living on the rocks

(iii) In villages, people use wood as fuel because

- (a) it is considered to be an ideal fuel
- (b) of its easy availability and low cost.
- (c) it is environment friendly.
- (d) it catches fire easily.

(iv) What do black buck, elephant, python and golden cat together represent in a forest?

- (a) fauna
- (b) ecosystem
- (c) flora
- (d) species

(v) Which one of the following terms is not a part of the nucleus?

- (a) ribosomes
- (b) chromosomes
- (c) nucleolus
- (d) cytoplasm

(vi) Reproduction by budding takes place in

- (a) hydra
- (b) amoeba
- (c) paramecium
- (d) bacteria

- (vii) For the metamorphosis of tadpoles; which of the following elements must be available in water?
 (a) Chlorine (b) Carbon
 (c) Sulphur (d) Iodine
- (viii) Which one of the following forces is a contact force?
 (a) force of gravity (b) force of friction
 (c) magnetic force (d) electrostatic force
- (ix) To sharpen the blade of a knife by rubbing it against a surface, which of the following will be most suitable?
 (a) Stone (b) Plastic block
 (c) Wooden block (d) Glass block
- (x) An electric current can produce
 (a) heating effect only
 (b) chemical effect only
 (c) magnetic effect
 (d) chemical, heating and magnetic effect

Very Short Answer Type Questions

[1 mark each]

2. (i) "Cells are the basic structural units of living organisms." Explain. [1]
 (ii) What is the purpose of tail in the sperm? [1]
 (iii) Which force is responsible for wearing out tyres of motor vehicles? [1]
 (iv) What is a drag? [1]
 (v) What is ultrasound? [1]
 (vi) Explain why a layer of zinc is coated over iron. [1]

Short Answer Type Questions-I

[2 mark each]

3. Write any three positive characteristics of plastic.
4. Give reason:
 (i) Sulphuric acid is poured on copper plate.
 (ii) Write word equation of the reaction involved.

[2]

5. It is difficult to burn a heap of green leaves but dry leaves catch fire easily. Explain. [2]
6. Explain how deforestation leads to reduced rainfall. [2]
7. Draw binary fission in Amoeba. [2]
8. Name the virus that causes AIDS. What are the mediums through which this virus is transmitted? [2]
9. An astronaut travels from the earth to the moon. How do its weight and mass change? [2]

Short Answer Type Questions-II

[3 mark each]

10. What is the cause of friction? [3]
11. Compare the sound of drum and whistle. [3]
12. Why do we not hear the sound of an explosion on the surface of the moon? [3]
13. Give reason:
Water is not used to control the fire involving electrical appliances or equipment. [3]
14. Once in a village, there was a fire in a hut. When a lot of dry powder of a substance, A was released over the fire, the fire got extinguished. [1+1+1]
 - (i) Name the substance A.
 - (ii) How does the substance extinguished fire?
 - (iii) Give another substance which behaves like substance A.
15. Draw a sketch of animal cell and plant cell showing differences between them. [3]
16. Give reason.
Sportsmen use shoes with spikes. [3]
17. What are three main factors essential to maintain reproductive health? Explain their importance. [3]
18. Draw structure of virus and amoeba. [3]
19. Draw a well labelled diagram of ultra-structure of Nucleus. [3]

Long Answer Type Questions

[5 mark each]

- 20.** Corrosion is a serious problem. Every year an enormous amount of money is spent to replace damaged iron. What steps can be taken to prevent this damage? [5]
- 21.** What are food preservatives? Explain some common food preservatives. [3+2]
- 22.** What are the major groups of micro-organisms? [5]
- 23.** Explain how fertilizers are different from manures? [5]

Solutions

Multiple Choice Type Questions

[1 mark each]

- 1.
- | | | |
|--------|--|-----|
| (i) | (b) Red. | [1] |
| (ii) | (b) Living in the sea. | [1] |
| (iii) | (b) of its easy availability and low cost | [1] |
| (iv) | (a) fauna | [1] |
| (v) | (a) ribosomes | [1] |
| (vi) | (a) hydra | [1] |
| (vii) | (d) Iodine | [1] |
| (viii) | (b) force of friction | [1] |
| (ix) | (c) wooden block | [1] |
| (x) | (d) Chemical, heating and magnetic effect. | [1] |

Very Short Answer Type Questions

[1 mark each]

- 2.
- | | | |
|-------|--|-----|
| (i) | Organisms in the living world differ from one another but all are made up of cells. So, cells in the living organisms are basic complex living structures. | [1] |
| (ii) | The sperms swim in the oviduct with the help of their tails to reach the egg. | [1] |
| (iii) | Tyres of motor vehicles wear out due to frictional force between tyres and the road. | [1] |
| (iv) | The frictional force exerted by fluids is called drag. | [1] |
| (v) | Sound frequencies higher than 20,000 Hz are called ultrasound. | [1] |
| (vi) | Layer of zinc is coated over iron because zinc prevents it from rust and corrosion. | [1] |

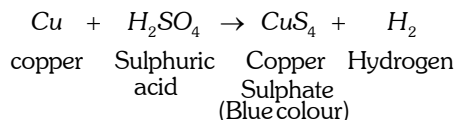
Short Answer Type Questions-I

[2 mark each]

- 3.
- Plastic is very strong/ light and durable. It can be moulded into different shapes and sizes. It is used for various purposes. Plastics are generally cheaper than metals. They are widely used in industry and for household articles.
- [2]

4. (i) Copper plate reacts with sulphuric acid and forms copper sulphate and hydrogen gas and a blue colour of copper sulphate appears. [1]

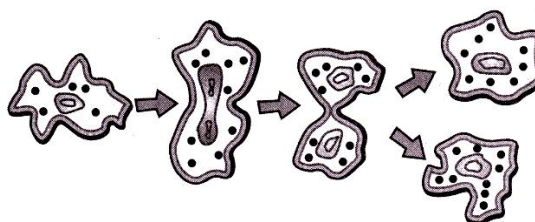
(ii)



5. As dry leaves have low ignition temperature than heap of green leaves because green leaves have water and other elements in them. So to ignite the green leaves/ we have to heat them up to ignition temperature of their constituents which is comparatively high. So/ it is easier to ignite dry leaves than green leaves. [2]

6. The plants need carbon dioxide for photosynthesis. Fewer trees would mean less consumption of carbon dioxide and its increased amount in the atmosphere. This leads to global warming as carbon dioxide traps the heat of sun rays. The increase in temperature on earth disturbs the water cycle and reduces rainfall. This causes drought. [2]

7.



Binary fission in Amoeba

8. AIDS is caused by a virus named HIV. It can be transmitted from an infected person to a healthy person by following ways : [1+1] [2]

(i) By infected syringes.

(ii) By infected mother to an infant.

(iii) By sexual contact with infected person.

9. Mass of an object remains constant at all the places, so mass of astronaut will not change. Weight of an object depends upon the gravity and at the moon, gravity is lesser than earth, so weight of astronaut will decrease. [2]

Short Answer Type Questions-II

[3 marks each]

10. Friction is caused by the irregularities on the two surfaces in contact. Even those surfaces that appear smooth have a large number of irregularity which lock each surface into one another. [3]

11. The frequency determines the shrillness or pitch of a sound. A drum vibrates with low frequency. Therefore, it produces low pitched sound. Whistle has a high frequency and therefore, produces a sound of higher pitch. [3]

12. There is no atmosphere on the moon and sound waves need a medium to travel. So we cannot hear the sound on the moon. [3]

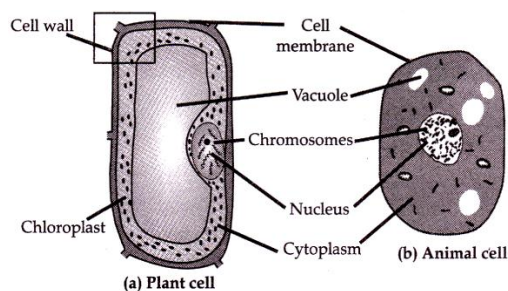
13. In case of fire produced by electric short circuit or electric equipment, water is not used at all because water is a good conductor of electricity and may result in electrocution or electric shock. [3]

14. (i) A is sodium bi-carbonate (NaHCO_3). [1]

(ii) The heat of fire decomposes sodium bicarbonate to produce carbon dioxide gas which covers the fire like a blanket. It cuts off supply of fresh air to the burning substance. Thus, fire gets extinguished.

(iii) Potassium hydroxide

15.



16. Sportsmen use shoes with spikes because these shoes give them a better grip while running. This is because the force of friction between the shoes and the ground increases with the help of spikes. [3]

17. Three main factors essential to maintain reproductive health are :

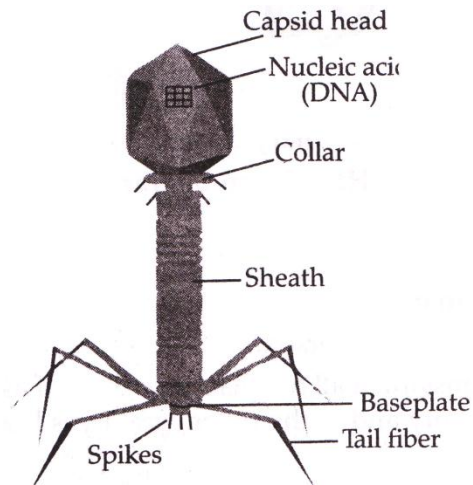
(i) **Balanced Diet:** The diet which contains the correct amount of each constituent (such as carbohydrates, fats, proteins, vitamins, minerals) sufficient for normal growth and development of a body. [1]

(ii) **Personal hygiene:** Adolescent boys and girls should take bath regularly, because the increased activity of sweat and oil glands can cause bacterial infection, if not washed and cleaned every day. [1]

(iii) **Physical exercise for adolescence:** Adolescent girls and boys should regularly do exercise as they improve mental health and protects the person from any disease or fatigue and increases the efficiency of the person. [1]

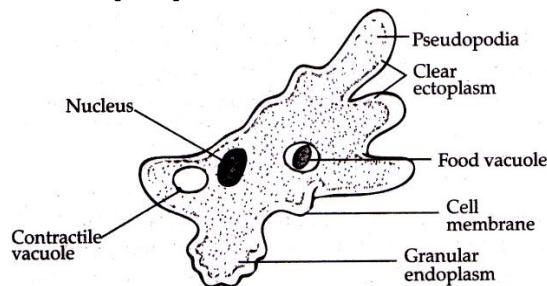
18. Virus:

[1 ½]



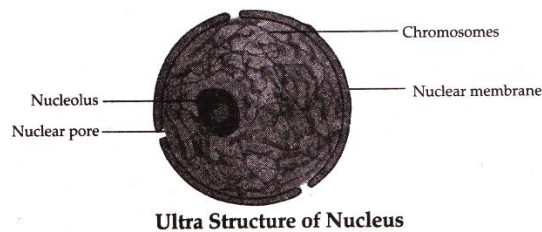
Amoeba:

[1 ½]



19.

[3]



Long Answer Type Questions

[5 mark each]

20. The wasting of iron objects due to rusting causes a big loss to the country's economy/ so it must be prevented by following methods :

(i) **By painting:** Paint is applied to the surface of an iron object, then air and moisture cannot come in contact of iron and hence no rusting occurs. [1]

(ii) **By applying grease or oil:** Tools and machine parts made of iron and steel are smeared with grease or oil to prevent their rusting. [1]

(iii) **By galvanization:** Galvanization is done by dipping an iron object in molten zinc metal. This thin layer of zinc metal on the surface of iron objects protects them from rusting. [1]

(iv) By tin plating and chromium-plating: When a thin layer of tin metal is deposited on iron and steel objects by electroplating then the iron and steel objects are protected from rusting. [1]

(v) By allowing it to make stainless steel: When iron is alloyed with chromium and nickel, stainless steel is obtained/ which does not rust at all. [1]

21. The chemical substances which are used to check or stop the growth of harmful micro-organisms in food are called food preservatives. These food preservatives keep the edible food materials protected from the invasion of micro-organisms which can spoil the food. [3]
Some common food preservatives are:

(i) Salt: Common salt is used to preserve meat, fish, ambia, raw mangoes, tamarind, etc.

(ii) Sugar: Jams, jellies and squashes are preserved by sugar. Sugar reduces the moisture content which inhibits the growth of bacteria that can spoil food.

(iii) Oil: Edible oils are used as preservatives in vegetables and pickles. Oil does not allow the moisture to surface, thus preventing the growth of harmful bacteria.

(iv) Vinegar: It is used to preserve fruits, vegetables, fish, meat and pickles. [2]

22. Micro-organisms are divided into four major groups which are as follows :

(i) Bacteria: These are single celled organisms which are harmful, as they cause disease and some of them may be useful as in vaccines.

(ii) Fungi: These are non-green plants which consume their food from the dead organic matter.

(iii) Protozoan: These are unicellular animals which cause diseases like malaria and dysentery.

(iv) Algae: These are photoautotrophic organisms that may be unicellular or multicellular. They play important role in medicines, agriculture, industry and as food.

Viruses are also considered to be micro-organisms but are actually the connecting links between non-living and living organisms. [5]

23. Fertilizers differ from manures in following ways:

(i) Manures are organic substances while fertilizers are chemical substances.

(ii) Manures are prepared in fields, while fertilizers are prepared in factories.

(iii) Manures contain all the nutrients, while fertilizers are rich in certain nutrients.

(iv) Manures provide humus, while fertilizers do not provide it. [5]