Sample Paper - 2

GENERAL INSTRUCTIONS

Attempt all the questions and follow the instructions fives 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 3markseach.

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 option : **[1 x 10 =10]**

(i) Identify the statement which is true for cells:
(a) Cells can be easily seen with naked eyes.
(b) Insect's egg is not a cell.
(c) A single cell can perform all the functions in a unicellular organism.
(d) The size and shape of cells is uniform in multicellular organism.

(ii) In human beings, after fertilization; the structure which gets embedded in the wall of uterus is -
(a) ovum
(b) embryo
(c) foetus
(d) zygote

(iii) Reproductive age in women starts when
(a) menstruation starts
(b) breasts start developing
(c) body weight increase
(d) all of these

(iv) During dry weather while combing hair, sometimes we experience hair flying apart. The force responsible for this is:
(a) force of gravity
(b) electrostatic force
(c) force of friction
(d) magnetic force.

(v) A toy car released with the same initial speed will travel farthest on
(a) muddy surface
(b) polished marble surface
(c) cemented surface
(d) glass block

(vi) Loudness of sound is measured in units of:
(a) decibel (dB)
(b) hertz (Hz)
(c) metre (m)
(d) metre/second (m/s)

(vii) The movement of the earth's plates causes
(a) cyclones
(b) lightning
(c) earthquakes
(d) thunderstorms.

(viii) We can see a non-luminous object, when light is
(a) emitted by the object falls on the eye.
(b) reflected from the object towards our eye
(c) completely passes through the object
(d) gets completely absorbed by the object

(ix) Morning star is the name given to:
(a) Pole Star
(b) Star Sirius
(c) Planet Jupiter
(d) Planet Venus

(x) The phenomenon of marble cancer is due to
(a) soot particles
(b) CFCs
(c) fog
(d) acid rain

Very Short Answer Type Questions

[1 mark each]

2. **(i)** In what situation does the net force become zero? **[1]**

(ii) What is a tester?
[1]

(iii) Who discovered the static electricity or lightning in clouds? **[1]**

(iv) How many kinds of nerve cells are there in retina? **[1]**

(v) Name the brightest planet in the night sky. **[1]**

(vi) What are multiple images? **[1]**

Short Answer Type Questions-I

[2 mark each]

3. **(i)** Name the practice followed for large scale rearing of farm animals. **[1+1]**
(ii) What facilities are provided to farm animals?

4. What do you mean by symbiotic relationship? **[2]**

5. What is 4R principle? **[2]**

6. Sodium metal is kept in kerosene but not in water. Why? **[2]**

7. Which zone of a flame does a goldsmith use for melting gold and silver and why? **[2]**

8. Crackers on ignition produce sound. Why? **[2]**

9. Explain why chloroplasts are found only in plant cells? **[2]**

Short Answer Type Questions-II

[3 mark each]

10. Mitochondria are important organelles of cell/often called 'powerhouse' of the cell. Give reason. **[3]**

11. Write difference between internal fertilization and external fertilization. **[3]**

12. Write a short note on -
Adam's apple **[3]**

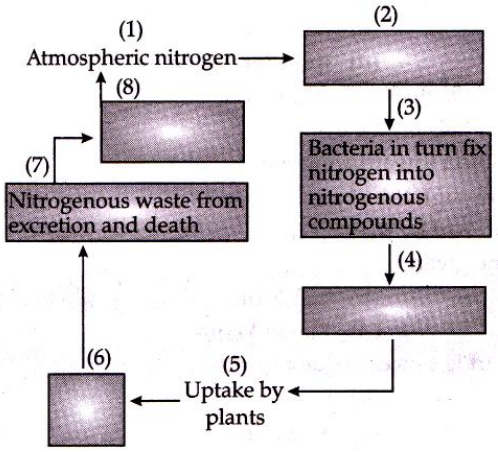
13. What do you mean by vacuum? What happens to the loudness of sound in vacuum? **[3]**

14. It is safer to use a wireless telephone rather than using a landline telephone during lightning. Explain the statement with the help of a reason.
[3]

15. The bulb glows when the electric current passes through it. Explain why? **[3]**

16. Differentiate between Fertilizer and Manure. **[3]**

17. Complete the flowchart: **[3]**



18. Friction is called a necessary evil. Why? **[3]**

19. Why is it very difficult to control forest fire? **[3]**

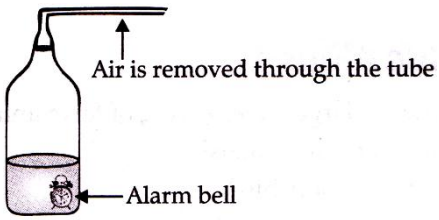
Long Answer Type Questions

[5 mark each]

20. Discuss the various ways to reduce the friction.

[5]

21. An alarm bell is kept inside a vessel as shown in Fig. A person standing close to it can distinctly hear the sound of alarm. Now if the air inside the vessel is removed completely how will the loudness of alarm get affected for the same person? **[5]**



22. How is CO_2 added to the atmosphere in excess?

[5]

23. Discuss various systems of irrigation. **[5]**

Solutions

Multiple Choice Type Questions

[1 mark each]

1.

(i) (c) A single cell can perform all the functions in a unicellular organism. **[1]**

(ii) (b) embryo **[1]**

(iii) (a) Menstruation starts **[1]**

(iv) (b) electrostatic force **[1]**

(v) (b) Polished marble surface **[1]**

(vi) (a) decibel (dB) **[1]**

(vii) (c) earthquakes **[1]**

(viii) (b) reflected from the object towards our eye. **[1]**

(ix) (d) Planet Venus **[1]**

(x) (d) acid rain **[1]**

Very Short Answer Type Questions

[1 mark each]

2. **(i)** When two equal forces act in opposite directions, the net force becomes zero. **[1]**

(ii) The device which is used to check current is called tester. **[1]**

(iii) Benjamin Franklin in 1752. **[1]**

(iv) There are two kinds of cells:
Cones: Sensitive to bright light.
Rods: Sensitive to dim light. **[½ + ½]**

(v) Venus **[1]**

(vi) Images formed by mirrors placed at an angle to one another are called multiple images. **[1]**

Short Answer Type Questions-I

[2 marks each]

3. **(i)** The practice of rearing of farm animals on a large scale is called animal husbandry. **[1]**

(ii) In animal husbandry, animals are provided with proper food, shelter and care. **[1]**

4. The relationship between two organisms in which both the organisms are benefitted is called symbiotic relationship. **[2]**

5. The 4R principle means Reduce, Reuse, Recycle and Recover. One should develop these habits, which are environment friendly. **[2]**

6. Sodium metal is highly reactive metal, when exposed in air, it starts to burn to form oxide. In the same way, it forms hydroxide with water. It does not react with kerosene. So, to prevent it, it is kept in kerosene, not in water. **[2]**

7. The blue, non-luminous zone (outer zone) because this point of the flame has the highest temperature, so it is used for melting gold and silver. **[2]**

8. When a cracker is ignited, a sudden reaction takes place with the evolution of heat, light, sound and a large amount of gas is liberated. Such a reaction is called explosion. So, cracker on ignition produces sound because of sudden formation of large amount of gas due to chemical reaction. **[2]**

9. Green coloured plastids are called chloroplasts. They provide green colour to the leaves and chlorophyll in the chloroplasts of leaves is essential for photosynthesis. In human cell, it is not required. So, chloroplasts are found only in plant cells. **[2]**

Short Answer Type Questions-II

[3 marks each]

10. Mitochondria are called the 'powerhouse' of the cell because they provide energy for all the activities of the cell by oxidizing food in the form of ATP (Adenosine triphosphate). **[3]**

11. Difference between Internal fertilization and External fertilization : **[3]**

Internal fertilization	External fertilization
Fertilization in which the fusion of the male and female gametes takes place inside the female body is called internal fertilization. e.g., Human, Cats, Dogs,	Fertilization in which the fusion of a male and a female gamete takes place outside the body of the female is called external fertilization. e.g., fish, star fish etc.

12. Adam's Apple: At puberty, the voice box or the larynx begins to grow. Boys develop larger voice boxes. The growing voice box in boys can be seen as a protruding part of the throat called Adam's apple. **[3]**

13. When air is removed completely from a vessel, it is said that there is a vacuum. The decreasing amount of air decreases loudness of sound. If all air is sucked from the vessel, the sound would stop completely.
The sound cannot travel through a vacuum. **[1 + 2]**

14. Since, lightning is an electrical discharge, so, during lightning, atmospheric electric charge may discharge through landline telephone wires which can become more dangerous. Thus, it is safer to use a wireless telephone rather than using a landline telephone during lightning. **[3]**

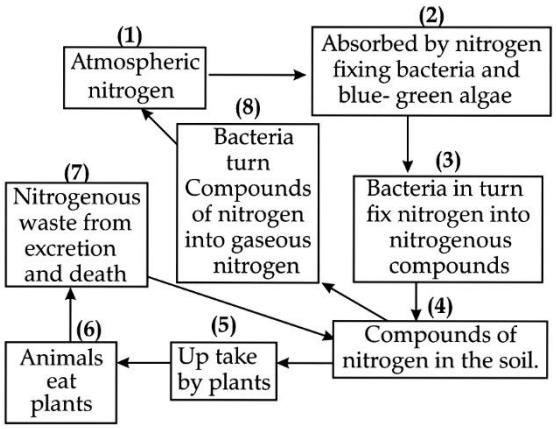
15. Due to the heating effect of current, the filament of the bulb gets heated to high temperature and it starts glowing. However, if the current through a circuit is weak, the filament does not get heated sufficiently and even does not glow. **[3]**

16. Differences between Fertilizer and Manure :

S. No.	Fertilizer	Manure
(i)	A fertilizer is an inorganic salt.	Manure is a natural substance obtained by the decomposition of cattle dung, human waste and plant residues.
(ii)	A fertilizer is prepared in factories.	Manure can be prepared in the fields.
(iii)	A fertilizer does not provide any humus to the soil.	Manure provides a lot of humus to the soil.
(iv)	Fertilizers are very rich in plant nutrients such as nitrogen, phosphorus and potassium.	Manure is relatively less rich in plant nutrients.

[1×3=3] (Any three points)

17.



[3]

18. Friction is called a necessary evil because we cannot do anything without friction and it also shows effects. No movement would come to an end without friction. Nobody would rest without friction. We cannot write with pen or pencil if there is no friction. If an object starts moving, it would never stop if there was no friction. It is also necessary for grip and bringing movements to rest. **[3]**

19. During extreme heat in the hot summer days, at some places dry grass catches fire. It is because the heat is sufficient to attain ignition temperature of grass. From grass, it spreads to trees and very soon the whole forest is on fire. It is called forest fire, it is very difficult to control forest fire. As fire spreads at a very high speed and in a very large area, it is very difficult to control it. **[3]**

Long Answer Type Questions

[5 marks each]

20. Friction may be reduced in the following ways :

(i) Polishing the surface: We polish the rubbing surfaces to reduce their unevenness and make them smooth.

[1]

(ii) Lubricating the surface: To reduce friction in order to increase efficiency, when oil, grease or graphite is applied between the moving parts of a machine, a thin layer is formed there and moving surfaces do not directly rub against each other. These substances are lubricants which reduce the friction.

[2]

(iii) Using wheels and ball bearings: By using wheels and ball bearing, we convert sliding friction into rolling friction. This reduces friction between the two contact surfaces and helps us to save energy, effort and time.

[1]

(iv) Streamlining: Objects are given special shapes, such as streamlined body to aeroplanes. Their bodies' shapes make them lose less energy in overcoming friction. Hence, all vehicles are designed to have shapes that reduce fluid friction.

[1]

21. Initially, the person is able to hear the sound coming from air and from water distinctly. But after sometime, when the air is completely removed from the bottle, the sound will pass through the water and then the glass and finally reach to the man. So, the man will not hear the sound which was coming through the air initially.

[5]

22. CO_2 is continuously being released because of human activities and on the other hand, forest area is decreasing. Plants utilize CO_2 from the atmosphere for photosynthesis, thereby decreasing the excess of CO_2 in the air. Deforestation leads to an increase in the amount of CO_2 in the air, because the number of trees which consume CO_2 becomes lesser. Human activity thus contributes to the accumulation of CO_2 in the atmosphere. **[5]**

23. The supply of water to crops at different intervals is called irrigation.

Various systems of irrigation are:

(i) Traditional methods: The water available in wells, lakes and canals is lifted up by:

(a) Moat (Pulley system)

(b) Chain pump

(c) Dhekli and;

(d) Rehat (Lever system)

Pumps are commonly used for lifting water. **[2½]**

(ii) Modern methods:

(a) Sprinkler system: This system is more useful on uneven land and with sandy soil. The perpendicular pipes, having rotating nozzles on top, are jointed to the main pipeline at regular intervals. When water flows through main pipes, it gets sprinkled on the crop as if it is raining.

(b) Drip system: In this system, water falls drop by drop just at the position of the roots. It is the best technique for watering fruit plants, garden and trees. **[2½]**