

2019
CLASS - IX
SCIENCE

Total marks : 80

Time : 3 hours

General instructions:

- i) Approximately 15 minutes is allotted to read the question paper and revise the answers.
- ii) The question paper consists of 26 questions. All questions are compulsory.
- iii) Internal choice has been provided in some questions.
- iv) Marks allocated to every question are indicated against it.

N.B: Check that all pages of the question paper is complete as indicated on the top left side.

1. Choose the correct answer from the given alternatives:

- | | | |
|----------------------------------------------------------------------------------------------------|-----------------------|----------|
| (a) The unit of pressure is measured in | | 1 |
| (i) kelvin | (ii) newton | |
| (iii) metre | (iv) pascal | |
| (b) Which of the following is a mixture? | | 1 |
| (i) Water | (ii) A cup of tea | |
| (iii) Oxygen | (iv) Sugar | |
| (c) In a compound such as water, the ratio of the mass of hydrogen to the mass of oxygen is always | | 1 |
| (i) 1:8 | (ii) 2:8 | |
| (iii) 1:16 | (iv) 3:16 | |
| (d) Which cell organelle is known as the suicide bag of a cell? | | 1 |
| (i) Ribosome | (ii) Lysosome | |
| (iii) Mitochondrion | (iv) Golgi body | |
| (e) Mammals are characterized by the presence of | | 1 |
| (i) mammary gland | (ii) hair | |
| (iii) pinnae | (iv) all of these | |
| (f) Impulse is measured in | | 1 |
| (i) newton | (ii) newton/sec | |
| (iii) newton/kg | (iv) newton sec | |
| (g) A bomb is released from an aircraft. Its trajectory is | | 1 |
| (i) a straight line | (ii) a parabole | |
| (iii) an arc | (iv) a zig-zag path | |
| (h) Which of the following does not require a medium to propagate? | | 1 |
| (i) Radio waves | (ii) Water waves | |
| (iii) Sound waves | (iv) Waves in strings | |
| (i) Disease that spread through water is | | 1 |
| (i) common cold | (ii) pneumonia | |
| (iii) cholera | (iv) tuberculosis | |
| (j) Which of the following is a micronutrient for plants? | | 1 |
| (i) Nitrogen | (ii) Phosphorus | |
| (iii) Iron | (iv) Calcium | |

Answer the following questions in one word or one sentence:

- 2. What are alloys? 1
- 3. Name the tissue which makes up the husk of coconut. 1
- 4. Define work. 1
- 5. What is soil pollution? 1
- 6. What is meant by the term 'disease'? 1

Answer the following questions in about 20-30 words:

- 7. Write the atomic numbers of the following elements:
(i) Oxygen (ii) Sodium 1+1=2
- 8. Give two roles of epidermis in plants. 2
- 9. An electric bulb of 60W is used for 6 hours per day. Calculate the units of energy consumed in one day by the bulb. 2
- 10. State any two conditions essential for good health. 2
- 11. Write two factors which are responsible for loss of grain during storage. 2

Answer the following questions in about 40-60 words:

- 12. Write any three factors affecting evaporation. 3
- 13. a. What is suspension? Give two properties of suspension. 1+2=3
Or
b. Define crystallization. Write two applications of crystallization.
- 14. State any three points of Dalton's Atomic Theory. 3
- 15. Diagrammatically show the three types of muscle fibres of human beings. 3
- 16. a. Write any three differences between amphibians and reptiles. 3
Or
b. Write any three differences between monocot and dicot plants.
- 17. Distinguish between speed and velocity. What does the odometer of an automobile measure? 2+1=3
- 18. a. An object is thrown vertically upwards and rise to a height of 10m. Calculate:
(i) the velocity with which the object was thrown upwards.
(ii) the time taken by the object to reach the highest point. 1½+1½=3
Or
b. A car falls off a ledge and drops to the ground in 0.5 seconds. Find:
(i) what is its speed on striking the ground?
(ii) how high is the ledge from the ground? (Given, $g=10\text{ms}^{-1}$)

19. Define energy. Define the two forms of mechanical energy. **1+2=3**
20. a. What are wavelength, frequency and amplitude of a sound wave? **3**
Or
b. What is ultrasound? Write two applications of ultrasound. **(1+2=3)**
21. Mention any three benefits of cattle farming. **3**

Answer the following questions in about 70-100 words:

22. Write three features of Rutherford's model of an atom and its two limitations. **3+2=5**
23. a. Draw the structure of a plant cell and label the following parts:
(i) cell wall (ii) mitochondrion (iii) nucleus
(iv) chloroplast (v) lysosome (vi) ribosome
Or **2+3=5**

- b. Draw the structure of an animal cell and label the following parts:
(i) plasma membrane (ii) cytoplasm (iii) nucleus
(iv) lysosome (v) mitochondrion (vi) golgi apparatus
24. a. State Newton's First Law of Motion. Give reasons why :
(i) A passenger in a moving car slips to one side of the seat when the car takes a sharp turn.
(ii) Athletes are made to fall either on a cushioned bed or a sand bed in a high jump athletic event.
Or **1+2+2= 5**

- b. State Newton's Third Law of Motion. Give reasons why:
(i) The passengers of a moving bus fall in the forward direction when the bus brakes to a stop and fall backwards when it accelerates from rest.
(ii) It is difficult for a fireman to hold a hose, which ejects large amounts of water at high velocity.
25. a. Explain any two modes of spread of communicable diseases and give one way to prevent each. **2½+2½=5**
Or

- b. Write any two most common communicable diseases among school children. Suggest any two preventive measures for each. **(1+2+2=5)**
26. a. With the help of a diagrammatic representation, explain the Nitrogen cycle in nature.
Or **2+3=5**
b. With the help of a diagrammatic representation, explain the Carbon cycle in nature.
