Duration: 3 hrs **Total Marks: 80**

General Instructions:

- The question paper is divided into five sections – A, B, C, D and E.
- All questions are compulsory and you should attempt all sections.
- In sections B, C, D and E you have an option to answer any one question.
- Questions 1 and 2 in Section A carry one mark.
- Question 3 to 5 in Section B carry two marks.
- Question 6 to 15 in Section C carry three marks.
- Question 16 to 21 in Section D carry five marks.
- Question 22 to 27 in Section E are based on practical skills. Each question carries two marks. You can answer the questions in brief.

Section A

1. Describe the arrangement of particles in solids, liquids and gases? **[1]**
2. What do you understand by the term nitrogen cycle? **[1]**

Section B

3. Are plastids present in animal cells? Name the two common types of plastids. **[2]**

OR

What kind of mixture is a solution? Name the different constituents of a solution.

4. Is it possible to have zero displacements even if an object covers a certain distance? Justify your answer. **[2]**

OR

Who framed the law of gravitation? State the law.

5. Give two conditions that are required for a human to be in good health. **[2]**

Section C

6. State three key postulates of Dalton's atomic theory **[3]**

OR

Name the three different models of an atom and the ones who formulated them.

7. Is blood a connective tissue? Give two important functions of blood. **[3]**
8. What happens to the kinetic energy of a falling object on hitting the ground? **[3]**
9. Describe the three characteristics of sound **[3]**
10. Name and describe the process to separate a mixture of two miscible liquids. **[3]**
11. Define; a. Valency b. Atomic Number c. Mass Number **[3]**
12. Draw and label the different parts of a cell. **[3]**
13. State three ways in which diseases can spread along with an example. **[3]**

OR

A bodybuilder lifts a dumbbell of 10 kg and raises it 2 m above the ground. Calculate the work done by him on lifting the weight.

14. State three reasons why the atmosphere is essential for life. **[3]**
15. Explain what is genetic manipulation in crops? List out its benefits.

Section D

16. Are plant and animal tissues the same? Name the different types of animal tissues and describe the key function of each tissue. **[5]**

OR

Give five differences between a plan and an animal cell.

17. Name the different divisions of the Kingdom Plantae. Also, describe their major characteristics along with an example for each. **[5]**

18. A boy 60 kg hops with a horizontal velocity of 5 ms^{-1} on a stationary skateboard. The skateboard weighs 4 kg. Find out the velocity when the board starts rolling? The condition given here is that any external unbalanced force is absent.

19. Why is the law of gravitation said to be universal? Given the equation for universal gravitation. Explain clearly the significance of this law. **[5]**

20. What do you mean by greenhouse effect? Name the factors responsible for this effect and also suggest some prevention measures. **[5]**

21. Give five differences between an atom and a molecule **[5]**

Section E

22. Take a bowl of water containing some amount of oil in it. How will you separate the two. **[2]**

23. Take some items like a bark of a tree or a bone and identify what kind of tissues are present in it. **[2]**

24. Water can exist in all the three states solid, liquid and gas. Conduct an experiment and describe what happens to the particles during the change of state? **[2]**

OR

While observing different kinds of seeds how will you distinguish between a dicot and a monocot seed?.

25. In our day to day life, we experience or come across different types of motions. Can you give an example of the motion when;

a. The acceleration is positive and in the direction of motion.
b. The acceleration is uniform or the rate of acceleration is constant.

26. When you stretch a rubber band what is the energy generated and lost? **[2]**

27. Can you determine who has a higher pitch, a sparrow chirping or a tiger roaring? Justify your answer. **[2]**