

CBSE
Class IX Science
Sample Paper - 14

Time: 3 hrs**Total Marks: 80****General Instructions:**

- The question paper comprises five sections – A, B, C, D and E. You are to attempt all the sections.
- All questions are compulsory.
- Internal choice is given in sections B, C, D and E.
- Question numbers 1 and 2 in Section A are one mark questions. They are to be answered in one word or in one sentence.
- Question numbers 3 to 5 in Section B are two marks questions. These are to be answered in about 30 words each.
- Question numbers 6 to 15 in Section C are three marks questions. These are to be answered in about 50 words each.
- Question numbers 16 to 21 in Section D are five marks questions. These are to be answered in about 70 words each.
- Question numbers 22 to 27 in Section E are based on practical skills. Each question is a two marks question. These are to be answered in brief.

Section A

1. What are weeds? Give two examples. (1)
2. Define ammonification and nitrification. (1)

Section B

3. List any two measures to prevent soil erosion. (2)
4. A car from rest moves with a uniform acceleration of 6 m/s^2 for 12 minutes. Calculate the acquired speed and the distance travelled in this time. (2)

OR

What are the equations of motion when gravity is acting on the falling object?

5. Explain the term atomicity. Give examples of diatomic elements. (2)

Section C

6. Explain the drawbacks of Rutherford's model of an atom. (3)
7. What is pasturage and how is it important? (3)

OR

What harm can be caused to crops if they are excessively irrigated?

8. Give reason: (3)
- (a) A bucket of water is cooled more quickly by placing ice in it and not by placing it on ice.
- (b) 1 kg of water at 0°C contains more heat than 1 kg of ice at 0°C.
- (c) 1 kg of steam at 100°C has more heat than water at the same temperature.
9. A wave pulse on a string moves at a distance of 10 m in 0.6 s. (3)
- (a) Find the velocity of the pulse.
- (b) What would be the wavelength of the wave on the same string if its frequency is 150 Hz?
10. (3)
- a) What is recoil velocity?
- b) State and explain conservation of momentum.
11. A wooden cuboid has a mass of 20 kg. The length, breadth and height of this wooden cuboid are 70 cm, 60cm and 50 cm, respectively. Find the pressure on the floor on which this block is kept with its breadth and height in contact with the floor. (3)

OR

Define work. State the SI unit of work. Work is which type of quantity?

12. How many grams of oxygen contain the same number of molecules as 32 grams of sulphur dioxide? (O = 16 u, S = 32 u) (3)

OR

Write the chemical formula of the following using the criss-cross method:

- (a) Calcium chloride
- (b) Magnesium hydroxide
- (c) Potassium carbonate

13. Neha was suffering from chicken pox for two weeks. Her friends call her and insist that she join them for the school picnic. She refuses and decides to stay at home. (3)
- (a) Which organism causes chicken pox?
- (b) List another disease which spreads through the same mode of transmission.
- (c) Mention any two values exhibited by Neha by not joining her friends for the picnic.
14. Differentiate between diffusion and osmosis. What is its importance? (3)
15. Plants in deep soil have more mechanical strength than plants in shallow soil. Why? (3)

Section D

16. (5)
- (a) Name the tissue which
- (i) Fills the space inside organs
- (ii) Connects bones to bones
- (iii) Transports water in plants
- (b) List any two points of differences between parenchyma and collenchyma.
17. (5)
- (a) Work done in moving the object through a distance of 30 m is 200 J. The object kept on a flat surface is pulled with the help of a string which makes an angle of 60° with the plane surface. Find the force acting on the object.
- (b) A car is being driven by a force of 5000 N. When travelling at the speed of 20m/s, it takes 1.5 minutes for this car to reach the river side. Calculate the work done.
18. Suppose there are five states of matter A, B, C, D and E. State A has a fixed volume but no fixed shape. State B can be compressed very easily by applying pressure and state C has a fixed shape as well as a fixed volume. State D is a mixture of free electrons and ions, whereas state E is named after an Indian scientist and a famous physicist. Based on the above information, answer the following:
- (a) Name the physical states (i) A, (ii) B, (iii) C, (iv) D and (v) E.
- (b) Name one substance belonging to state C which can directly change into vapours on heating. What is this process known as?
- (c) Name one substance which normally belongs to state B but whose solid state changes directly into the gaseous state.
- (d) Name the most common substance belonging to state A.
- (e) Which state of matter makes the Sun and other stars to glow?

OR

Write the molecular formulae for the following compounds:

- (a) Copper (II) bromide
- (b) Aluminium (III) nitrite
- (c) Calcium (II) phosphate
- (d) Magnesium (II) acetate
- (e) Mercury (II) chloride

19.

- (a) A man weighs 300 N on the surface of the Earth. If he were taken to the Moon, his weight would be 50 N. Calculate the mass of this man on the Moon ($g = 10 \text{ m/s}^2$). (3)
- (b) A man hears a clap of thunder 2 seconds after lightning strikes. Calculate the distance of lightning from the man (Speed of sound in air = 330 m/s). (2)

OR

- (a) Using Newton's law of motion, derive the relation between force and acceleration.
- (b) Define one newton.
- (c) Which would require a greater force to accelerate—a 0.5-kg mass at 5 m/s^2 or a 4-kg mass at 2 m/s^2 ? Give reasons.

20.

(5)

- (a) Write any three points for the importance of classification.
- (b) Name the system that helps in circulating water for food and oxygen in poriferans. What is their habitat?

OR

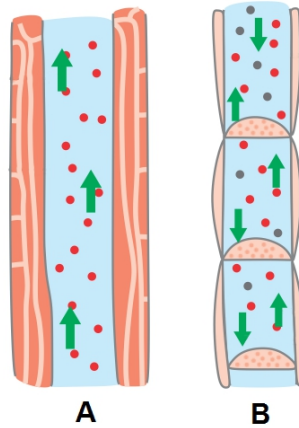
- (a) Write four characteristic features of Protochordates.
- (b) Give reasons:
 - (i) Frogs have both skin and lungs for breathing.
 - (ii) Whale is a mammal not a fish.

21. Give five characteristics associated with the gas, liquid and solid states.

(5)

Section E

22. Observe the figures A and B given below. (2)



- (a) List the elements present in tissue B.
- (b) Which of these tissues helps in the transport of food in plants?

OR

- (a) The slide given to you for identification consists of long, narrow, dead cells which have thick boundaries which provide strength to the plant parts. Which plant tissue slide was shown to you?
- (b) Which plant tissue yields jute and coir?

23. Rekha observed the rhizome and circinate leaves in the given specimen. (2)



- (a) Which specimen has she observed?
- (b) To which group of plants does this specimen belong?

24. How will you separate the following: (2)

- (i) Ammonium chloride and sand
- (ii) Pigments of leaf
- (iii) Nitrogen from liquid air
- (iv) Iodine and chloroform

25. Describe what happens when we toast bread. What type of change is this? (2)

OR

When hydrogen sulphide gas is passed through a blue solution of copper sulphate, a black precipitate is formed. Identify the type of reaction and give its balanced chemical equation.

26. While determining the density of the material of a body, a student recorded the following observations: (2)

(a) Mass of the body = 60.2 g

(b) Reading of the water level in the measuring cylinder without the body = 15.2 ml

(c) Reading of the water level in the measuring cylinder with the body = 22.2 ml

Based on these observations, what will be the density of material of the body in kg m^{-3} ?

OR

To establish the relationship between the weight of a wooden block lying on a horizontal surface and the minimum force required to just move it using a spring balance, two students performed the experiment with the cuboid of the same dimensions and the same weight. Student A placed the cuboid on sand paper, while Student B placed it on wood mica. What is the relation between the applied forces in the spring balance for the two substances? Why?

27. From the figure below, what is the measure of the angle of reflection? (2)

