

CBSE Class 9 Science Sample Paper- Set 2

(2021 Question Paper Pattern)

Time - 3 Hours

Total Marks – 80

General Instructions

- (i) The question paper comprises two sections, A and B. Students have to attempt both the sections.
- (ii) All given questions are compulsory.
- (iii) All the questions of section A and section B are to be attempted separately.
- (iv) Questions 1 to 3 in section A are of one mark. These are to be answered in one word or in one sentence.
- (v) Question numbers 4 to 6 in section A are two marks. These have to be answered in about 30 words each.
- (vi) Questions 7 to 15 in section A are of three marks. These are to be answered in about 50 words.
- (vii) Question number 16 to 21 in section A are of five marks. Question number 19, 20 and 21 have options.
- (viii) Question number 22 to 30 in section B are multiple choice questions. Each question is of one mark. You are to select one appropriate response out of the four provided.
- (ix) Question numbers 31 and 32 are of two marks each and are based on practical skill.

SECTION- A

Find below the 1-mark questions

1. What is meant by a substance?
2. What are Unstriated/Smooth Muscles?
3. An object has moved through a distance. Can it have zero displacement? If yes, support your answer with an example.

Below given are the 2 marks questions

4. What are polyatomic ions? Give examples.
5. How many types of elements together make up the xylem tissue? Name them.
6. A pair of bullocks exerts a force of 140 N on a plough. The field being ploughed is 15 m

long. How much work is done in ploughing the length of the field?

3 marks questions can be found below:

7. Point out the differences between homogenous and heterogenous mixtures.
8. Draw a sketch of Bohr's model of an atom with three shells.
9. Hydrogen and oxygen combine in the ratio of 1:8 by mass to form water. What mass of oxygen gas would be required to react completely with 3 g of hydrogen gas?
10. How do substances like CO₂ and water move in and out of the cell? Discuss.
11. Give three features of cardiac muscles.
12. Differentiate between striated, un-striated and cardiac muscles on the basis of their structure and site/location in the body.
13. During an experiment, a signal from a spaceship reached the ground station in five minutes. What was the distance of the spaceship from the ground station? The signal travels at the speed of light, that is, 3×10^8 m/s.
14. A mass of 10 kg is at a point A on a table. It is moved to a point B. If the line joining A and B is horizontal, what is the work done on the object by the gravitational force? Explain your answer.
15. What is the acceleration of free fall?

Find below, the 5 marks Questions

16. What are the steps you would use for making tea? Use the words solution, solvent, solute, dissolve, soluble, insoluble, filtrate, and residue.
17. Make a comparison and write down ways in which plant cells are different from animal cells.
18. In the following example, try to identify the number of times the velocity of the ball changes: "A football player kicks a football to another player of his team who kicks the football towards the goal. The goalkeeper of the opposite team collects the football and kicks it towards a player of his own team". Also identify the agent supplying the force in each case.
19. Calculate the formula unit masses of ZnO, Na₂O, K₂CO₃, given atomic masses of Zn = 65u, Na = 23 u, K=39u, C = 12u, and O=16u.

Or

How are sol, solution and suspension different from each other?

20. Differentiate between sclerenchyma and parenchyma tissues. Draw well labelled diagram.

Or

Give reasons for:

- (a) Meristematic cells have a prominent nucleus and dense cytoplasm but they lack vacuole.
- (b) Intercellular spaces are absent in sclerenchymatous tissues.
- (c) We get a crunchy and granular feeling, when we chew pear fruit.
- (d) Branches of a tree move and bend freely in high wind velocity.
- (e) It is difficult to pull out the husk of a coconut tree.

21. A farmer moves along the boundary of a square field of side 10m in 40 s. What will be the magnitude of displacement of the farmer at the end of 2 minutes 20 seconds from his initial position?

Or

Look at the activities listed below. Reason out whether or not work is done in the light of your understanding of the term 'work'.

- (a) Suma is swimming in a pond.
- (b) A donkey is carrying a load on its back.
- (c) A wind-mill is lifting water from a well.
- (d) A green plant is carrying out photosynthesis.
- (e) An engine is pulling a train.
- (f) Food grains are getting dried in the sun.
- (g) A sailboat is moving due to wind energy.

SECTION- B

Find below MCQs

- 22.** What are the functions of a parenchyma cell?
- (a) Store and assimilate food
 - (b) Provide mechanical support and elasticity to the stems of dicot plants
 - (c) Provides tensile strength and flexibility to the plant body.
 - (d) Make the plant body rigid, flexible, and elastic.
- 23.** Which of the following will show the “Tyndall effect”?
- (a) Salt solution
 - (b) Milk
 - (c) Copper sulphate solution
 - (d) Starch solution.
- 24.** A boy is whirling a stone tied with a string in an horizontal circular path. If the string breaks, the stone
- (a) will continue to move in the circular path
 - (b) will move along a straight line towards the centre of the circular path
 - (c) will move along a straight line tangential to the circular path
 - (d) will move along a straight line perpendicular to the circular path away from the boy
- 25.** The atmosphere is held to the earth by
- (a) gravity
 - (b) wind
 - (c) clouds
 - (d) earth’s magnetic field
- 26.** The girth of stem increases due to
- (a) apical meristem
 - (b) lateral meristem
 - (c) intercalary meristem
 - (d) vertical meristem

27. Slope of a velocity – time graph gives

- (a) the distance
- (b) the displacement
- (c) the acceleration
- (d) the speed

28. What is the feature of “mass” from those mentioned below?

- (a) Force of gravity acting on the body
- (b) Quantity of matter contained in the body
- (c) It has magnitude as well as direction
- (d) It does not remain constant at various places

29. The protein synthesis in cells take place in _____

- (a) Lysosomes
- (b) Enzymes
- (c) Ribosomes
- (d) Chromosomes

30. Which among the following is a chemical change?

- (a) Cutting the trees
- (b) Boiling of water to form steam
- (c) Rusting of Almirah
- (d) Melting of butter in a pan

Short Answers- 2 marks Questions

31. Calculate the molar mass of the following substances.

- (a) Ethyne, C_2H_2
- (b) Sulphur molecule, S_8
- (c) Phosphorus molecule, P_4 (Atomic mass of phosphorus =31)
- (d) Hydrochloric acid, HCl

32. Why is it advised to tie any luggage kept on the roof of a bus with a rope?