

# MODEL QUESTION PAPER: 2021-22

## PERIODIC TEST-1

### SCIENCE

**Class: IX**

**Max. Marks: 40**

**Duration: 1.5 HRS**

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#### General Instructions:

- (i) *The question paper comprises four sections A, B, C and D. There are 16 questions in the question paper. All questions are compulsory.*
- (ii) *Section–A - question no. 1 to 7 - all questions and parts thereof are of one mark each. These questions contain multiple choice questions (MCQs), very short answer questions and assertion - reason type questions. Answers to these should be given in one word or one sentence.*
- (iii) *Section–B - question no. 8 to 10 are short answer type questions, carrying 2 marks each. Answers to these questions should in the range of 30 to 50 words.*
- (iv) *Section–C - question no. 11 to 13 are short answer type questions, carrying 3 marks each. Answers to these questions should in the range of 50 to 80 words.*
- (v) *Section–D – question no. - 14 to 16 are long answer type questions carrying 5 marks each. Answer to these questions should be in the range of 80 to 120 words.*
- (vi) *There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.*
- (vii) *Wherever necessary, neat and properly labeled diagrams should be drawn.*

#### SECTION A

1. A car covers unequal distance in equal intervals of time. What type of motion does the car exhibit? (1)
2. Define latent heat of fusion. (1)
3. Suggest a method to liquefy atmospheric gases? (1)

#### OR

A solid change to gas without changing into liquid state. What is this process called?

For question numbers 4, 5 and 6, two statements are given- one labelled **Assertion (A)** and the other labelled **Reason (R)**. Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

- a) Both A and R are true and R is correct explanation of the assertion.

- b) Both A and R are true, but R is not the correct explanation of the assertion.
- c) A is true, but R is false.
- d) A is false, but R is true.

4. Assertion: The numerical ratio of displacement to distance is equal to one or less than one.

Reason: Displacement is a vector quantity and distance is a scalar quantity. (1)

5. Assertion: A body having non-zero acceleration can have a constant velocity.

Reason: Acceleration is the rate of change of velocity. (1)

6. Assertion: Sponge can be compressed.

Reason: Some solids are compressible. (1)

**Q. No 7 Contain five sub-parts each. You are expected to answer any four sub-parts in this question.**

7. Read the following and answer any **four** questions from 7 (i) to 7 (v)

Plastids are double membrane organelles which are found in the cells of plants and algae. Plastids are responsible for manufacturing and storing of food. These often contain pigments that are used in photosynthesis. Some plastids are without having any pigments. (1x4=4)

(i) Which of the following plastids are colourless?

- a) Chromoplast
- b) Leucoplast
- c) Chloroplast
- d) None of the above

(ii) The kitchen of the cells are .....

- a) Mitochondria
- b) Endoplasmic reticulum
- c) Chloroplast
- d) Golgi apparatus

(iii) Coloured plastids are called.....

- a) Leucoplast
- b) Chromoplast
- c) Vacuoles
- d) None of the above

(iv) Which of the following is the function of leucoplast?

- a) It helps in photosynthesis
- b) It gives colour to various plant parts.
- c) It stores starch, oil and proteins.
- d) None of these

(v) Plastids are able to produce proteins because:

- a) They contain ribosomes.
- b) They contain DNA.
- c) They contain double layered membrane.
- d) None of the above

### SECTION B

8. Distinguish between speed and velocity. (2)

9. (a) The smell of hot food reaches you several meters away, but to get the smell of cold food you have to go close. Why? (2)

(b) What does the boiling point of a substance indicate?

10. What are the functions of vacuoles? (2)

### OR

How do substances like  $\text{CO}_2$  and water move in and out of the cell?

### SECTION C

11. (a) Define uniform circular motion. (3)

(b) A body moves in a circle of radius  $2R$ . What is the distance covered and displacement of the body after completing 2 rounds?

12. (a) With 2-3 crystals of potassium permanganate, a large volume of water can be coloured.

Which characteristic of matter is related to it? (3)

(b) Water is a liquid at room temperature. Write any two points to justify your answer

### OR

Compare any 3 properties of solids, liquids and gases.

13. Explain the structure and functions of Golgi apparatus. (3)

**SECTION D**

14. (a) Derive the equation of motion  $v = u + at$ , using the graphical method. (5)

(b) A cheetah can accelerate from rest at the rate of  $4 \text{ m s}^{-2}$ .

(i) What will be the velocity attained by it in 10 seconds?

(ii) How far will it travel in this duration?

**OR**

(a) Draw the shape of distance- time graph for the following situations:

(i) When a body is stationary.

(ii) When a body moves with uniform speed.

(iii) When a body moves with non-uniform speed.

(b) A car travels a certain distance with a speed of 50 km/h and returns with a speed of 40 km/h. Calculate the average speed for the whole journey?

15. (a) Why does a desert cooler cool better on a hot dry day? (5)

(b) Which causes severe burns, boiling water or steam? Why?

(c) Convert  $35^\circ\text{C}$  in to Kelvin

(d) Draw a flow chart to show the inter conversion of the three states of matter.

16. a) Draw a labelled diagram of a prokaryotic cell. (5)

b) Differentiate between a plant cell and an animal cell.

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