

# I-PERIODIC TEST : 2023-24

CLASS - IX (CBSE)

SCIENCE

M.M.: 50

Time: 2 hrs.

## General Instructions :-

1. This question paper comprises of five Sections- A, B, C and D
2. All questions are compulsory.
3. Section -A consists of 1 mark questions, it contains MCQ & case study type questions.
4. Section-B consists of 1 mark questions, it contains very short answer and Assertion-reason type questions.
5. Section-C consists of 2 marks questions, it contains short answer type questions
6. Section-D consists of 5 marks questions, it contains long answer type questions

## SECTION - A [20 Marks]

### COMPETENCY BASED QUESTIONS (MCQ & Case Study Based Type Questions)

- Question 1  
Cell organelle which functions both as intracellular transport system and manufacturing process : [1]  
a) Nucleus b) E.R  
c) Mitochondria d) None of these
- Question 2  
The longest cell in the Human body is : [1]  
a) Nephron b) Neuron c) Liver cell d) sperm
- Question 3  
Organelle playing important role in detoxifying poisons and drugs : [1]  
a) Ribosomes b) Vacuole  
c) Smooth Endoplasmic Reticulum d) Rough Endoplasmic reticulum
- Question 4  
Which of the following is not a property of gas ? [1]  
a) Gases have a definite shape  
b) Gases have no definite volume  
c) The rate of diffusion of a gas is higher  
d) Gaseous particles are in a state of random motion
- Question 5  
The boiling point of alcohol is  $78^{\circ}\text{C}$ . What is this temperature in Kelvin scale : [1]  
a) 373 K b) 351 K c) 375 K d) 78 K
- Question 6  
The state of matter which consists of super energetic particles in the form of ionized gases is called: [1]  
a) Gaseous state b) Liquid state  
c) Bose- Einstein condensate d) Plasma state
- Question 7  
Convert speed of 90 km/hr in to m/sec : [1]  
a) 324 m/sec b) 25 m/sec c) 90 m/sec d) 0.9 m/sec
- Question 8  
A body is moving with some velocity along a straight path. If a negative acceleration starts acting on the body then. Immediately : [1]  
a) body returns back with constant velocity.  
b) body returns back with decreasing velocity  
c) body continues to move in the forward direction with decreasing velocity  
d) body continues to move in the forward direction with increasing velocity
- Question 9  
The rate of change of distance with time is known as : [1]  
a) velocity b) speed  
c) acceleration d) retardation
- Question 10  
Out of mass, time, temperature and velocity, which one is a vector quantity? [1]  
a) mass b) velocity  
c) time d) temperature

Question 11

[1×4=4]

Read the following and answer any four questions from (i) to (iv).  
Solids have a definite shape, distinct boundaries and fixed volumes, that is, have negligible compressibility. Solids have a tendency to maintain their shape when subjected to outside force. Liquids have no fixed shape but have a fixed volume. They take up the shape of the container in which they are kept. Liquids flow and change shape, so they are not rigid but can be called fluid. Gas has indefinite shape, no fixed volume. Gas gets the shape and volume of container. Gas has very low density hence are light. Gas can flow easily and hence are called fluid.

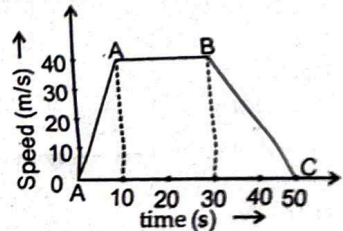
- Which of the following state of matter takes shape of container in which it is filled?  
a) Solid      b) Liquid      c) Gas      d) Both b and c
- Distance between particles of matter least in :  
a) Solid      b) Liquid      c) Gas      d) None of these
- Compressibility is least in case of :  
a) Solid      b) Liquid      c) Gas      d) None of these
- Give properties of Gases.

Question 12

[1×3=3]

Read the following and answer any three questions from (i) to (iv).  
You can determine the magnitude of displacement in a given time interval by finding the area under the velocity-time graph. If the body is uniformly accelerating, we get a straight line inclined to the time axis. In case of non-uniformly accelerated motion, velocity-time graph can have any shape. The slope of the velocity time graph gives its acceleration in the given time interval.

Questions : With reference to the given graph answer the following questions.



- Which part of the graph shows negative acceleration?
- Calculate the magnitude of acceleration from O to A?
- Calculate the magnitude of displacement between 30 to 50 second.

Question 13

[1×3=3]

Read the following paragraph carefully and answer the following questions :  
Water follows the law of diffusion. The movement of water through a selectively permeable membrane is called osmosis. The movement of water across the plasma membrane is affected by the amount of substance dissolved in water.

- Name the phenomenon by which raisins placed in water swell up.
- What is Plasmolysis ?
- How does exosmosis take place in a cell?

SECTION - B [10 Marks]

[VERY SHORT ANSWER & ASSERTION - REASON TYPE QUESTIONS]

Question 14

The smell of perfume gradually spreads across a room due to \_\_\_\_\_.

[1]

Question 15

\_\_\_\_\_ is the change of gaseous state directly to solid state without going through liquid state.

[1]

Question 16

Give the answers of following parts :

[1×2=2]

- Write the unit of the quantity obtained by area under a velocity-time graph.
- Can balanced forces acting on a body at rest move it? Yes or no.

Question 17

Fill in the blanks :

[1×3=3]

- Cork cells contain a chemical called \_\_\_\_\_.
- The nuclear region of a prokaryotic cell is called \_\_\_\_\_.
- \_\_\_\_\_ gives flexibility in plants.

Question no. 18 to 20, consist of two statements- Assertion (A) and Reason (R). Answer these question selecting the appropriate option given below :

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

Question 18

Assertion (A) : If the distance travelled by body is directly proportional to the square of time taken, then its speed is increasing with time. [1]

Reason (R) : The speed is equal to the rate of change of distance.

Question 19

Assertion (A) : When a solid melts, its temperature remains the same. [1]

Reason (R) : It is due less kinetic energy of molecules.

Question 20

Assertion (A) : It is difficult to pull out the husk of coconut. [1]

Reason (R) : Husk of a coconut has a sclerenchyma cells having thick walls.

### SECTION - C [10 Marks]

#### [SHORT ANSWER TYPE QUESTIONS]

Question 21

What is the condition under which the magnitude of average velocity of an object is equal to its average speed. Give a suitable example. [2]

Question 22

To which physical state of matter do the following statements apply? [2]

- i) Incompressible, no fixed shape
- ii) Compressible, no definite volume

Question 23

Define : i) Latent heat of vaporisation ii) Colloidal solution [2]

Question 24

Give one word answer for the following : [2]

- a) What is the living matter of a cell called?
- b) Name the chemical substance with water proofing property covering the aerial parts of a plant.

Question 25

Explain why : i) Evaporation causes cooling ? [2]  
ii) Gases exerts pressure in all the directions ?

OR

Which separation techniques will you apply for separation of the following ?

- i) Oil from water
- ii) Butter from curd

### SECTION - D [10 Marks]

#### [LONG ANSWER TYPE QUESTIONS]

Question 26

An athlete completes one round of a circular track of diameter 200 m in 40 second. [5]  
What will be the distance covered and the displacement at the end of 2 minutes 30 second.

OR

- i) Draw velocity versus time graph of a stone thrown vertically upwards and then coming downward after attaining the maximum height. [2+3]
- ii) A car travels 100 km distance with a speed of 60 km/hr and returns with a speed of 40 km/hr. Calculate the average speed for the entire journey.

Question 27

Draw a neat diagram of a plant cell and label the following.

- a) Cell wall
  - b) Chloroplast
  - c) Vacuole
  - d) Golgi apparatus
- [3+2]

OR

- a) Draw and identify different elements of phloem.
- b) Differentiate between sclerenchyma and chlorenchyma.

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