

**ATOMIC ENERGY CENTRAL SCHOOL -5, MUMBAI**

Class IX Science (086)

Session: 2023-2024

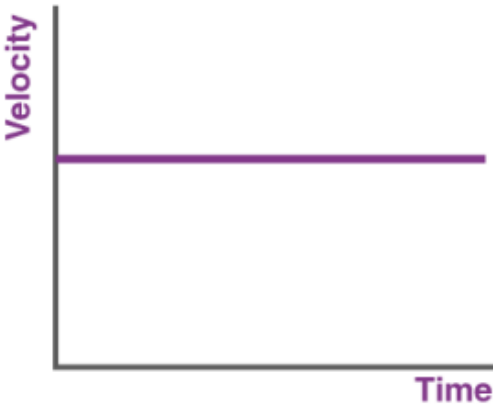
**Periodic Test-1**

Time: 1hr 30 min.

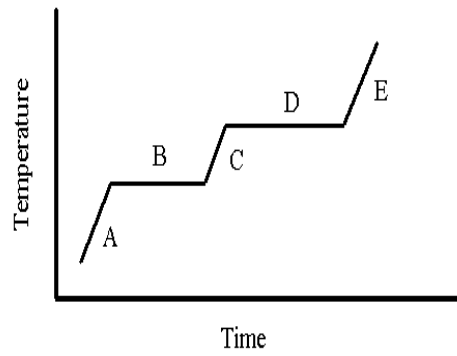
Maximum Marks: 40

<b>SECTION A</b>		
<b>No.</b>	<b>Questions</b>	<b>Marks</b>
1	<p>Cell is the structural and functional unit of life. The word cell is derived from the Latin word ‘cellula’ which means “a little room”. Can you name the scientist who coined the term cell?</p> <p>(a) Robert Hooke (b) Anton Von Leeuwenhoek (c) Robert Brown (d) Ernst Haeckel</p>	1
2	<p>Endoplasmic reticulum one of the cell organelles, exists as a membranous network that extends from outer membrane of nucleus to the plasma membrane making a connection between them.</p> <p>Which of the following statements is not related to the endoplasmic reticulum?</p> <p>(a) It behaves as transport channel for proteins between nucleus and cytoplasm. (b) It transports materials between various regions in cytoplasm. (c) It can be the site of energy generation. (d) It can be the site of some biochemical activities of the cell.</p>	1
3	<p>You must have observed that a fruit when unripe is green but it becomes beautifully coloured when ripe. According to you what is the reason behind this colour change.</p> <p>(a) Chloroplasts change to chromoplasts (b) Chromoplasts change to chromosomes (c) Chloroplasts change to chromosomes (d) Chromoplasts change to chloroplasts</p>	1
4	<p>Bhanu visited a Natural Gas Compressing Unit and found that the gas can be liquefied under specific conditions of temperature and pressure. While Sharing her experience with friends she got confused. Help her to identify the correct set of conditions</p> <p>(a) Low temperature, low pressure (b) High temperature, low pressure (c) Low temperature, high pressure (d) High temperature, high pressure</p>	1

5	<p>A few substances are arranged in the increasing order of ‘forces of attraction’ between their particles. Which one of the following represents a correct arrangement?</p> <p>(a) Water, air, wind (b) Air, sugar, oil (c) Oxygen, water, sugar (d) Salt, juice, air</p>	1
6	<p>On converting 25°C, 38°C and 66°C to kelvin scale, the correct sequence of temperature will be</p> <p>(a) 298 K, 311 K and 339 K (b) 298 K, 300 K and 338 K (c) 273 K, 278 K and 543 K (d) 298 K, 310 K and 338 K</p>	1
	<p><b>Directions:</b> In the following questions from 7 to 9, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:</p> <p>(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A). (b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A). (c) Assertion (A) is true but reason (R) is false. (d) Assertion (A) is false but reason (R) is true.</p>	
7	<p><b>Assertion:</b> A plant cell bursts if placed in water. <b>Reason:</b> High turgor pressure causes bursting of cells.</p>	1
8	<p><b>Assertion:</b> Gases exert pressure on the walls of the container. <b>Reason:</b> The intermolecular force of attraction is very strong in gases.</p>	1
9	<p><b>Assertion :</b> An object may acquire acceleration even if it is moving at a constant speed. <b>Reason :</b> With change in the direction of motion, an object can acquire acceleration.</p>	1
<b>SECTION-B</b>		
10	<p>(a) Doctors advise putting strips of wet cloth on the forehead of a person having a high fever. Why? (b) Why it is difficult to cook on hills compared to plains?</p>	2
11	<p>Figure shows distance time graph of three objects A,B and C.</p> <p>(a) Which object is moving with a greater speed. (b) Which object is moving with slowest speed.</p>	2

<b>SECTION-C</b>		
12	Draw a neat diagram of a plant cell. Name and label the following parts in the diagram. (a) Organelle that provides energy to the cell. (b) Structure that helps in photosynthesis. (c) The outermost protective covering. (d) Structure carrying genetic material.	1+2=3
13	Velocity-time graph for the motion of an object is given below <div style="text-align: center;">  <p>The graph shows a vertical axis labeled 'Velocity' and a horizontal axis labeled 'Time'. A horizontal purple line is drawn at a constant level on the velocity axis, extending to the right along the time axis, indicating uniform motion.</p> </div> (a) Identify the nature of motion of the body. (b) Find the acceleration of the body. (c) Draw the shape of distance-time graph for this type of motion.	3
<b>SECTION-D</b>		
14	(a) Radha added salt into some vegetables while cooking. After adding salt, vegetables release water. Why? (b) There would be no plant life if chloroplasts did not exist. Justify. (c) Why is the Golgi apparatus called the secretary organelle of the cell? (d) Name the two types of cell division. Write any two differences between them.	1+1+1+2=5
15	(a) Write differences between evaporation and boiling (b) Explain various factors which affect the evaporation (c) Give two examples of sublimation	2+2+1
16	(a) Derive the equation of motion $v = u + at$ , using graphical method. (b) A train starting from rest attains a velocity of 72 km/h in 5 minutes. Assuming the acceleration is uniform, find (i) the acceleration. (ii) the distance travelled by the train for attaining this velocity.	2+2+1=5

<b>SECTION-E [CASE-BASED]</b>		
17	<p>Plasma membrane or Cell membrane is the outermost covering of the cell that separates the contents of the cell from its external environment. The plasma membrane is flexible and is made up of organic molecules called lipids and proteins. The flexibility of the cell membrane also enables the cell to engulf in food and other material from its external environment. Such processes are known as endocytosis. The plasma membrane allows or permits the entry and exit of some materials in and out of the cell. It also prevents movement of some other materials. The cell membrane, therefore, is called a selectively permeable membrane.</p> <p>1. The plasma membrane is made up of _____</p> <p>(a) Proteins (b) Lipids (c) Proteins and Lipids (Lipoproteins) (d) Cellulose</p> <p>2. Which of the following substance is known as cellular waste?</p> <p>(a) Oxygen (b) Nitrogen (c) Carbon dioxide (d) Water</p> <p>3. The movement of a substance from the region of higher concentration to the region where its concentration is lower is called as _____</p> <p>(a) Osmosis (b) Diffusion (c) Excretion of carbon dioxide (d) Endocytosis</p> <p>4. The process of engulf in large food and other particles by the cell is called</p> <p>(a) Endosmosis (b) Exosmosis (c) Endocytosis (d) Plasmolysis</p>	1/2x4=2
18	<p>Latent heat, energy absorbed or released by a substance during a change in its physical state (phase) that occurs without changing its temperature. The latent heat associated with melting a solid or freezing a liquid is called the heat of fusion; that associated with vaporizing a liquid or a solid or condensing a vapour is called the heat of vaporization. The latent heat is normally expressed as the amount of heat (in units of joules or calories) per mole or unit mass of the substance undergoing a change of state. The graph given below is change of states of water:</p>	2

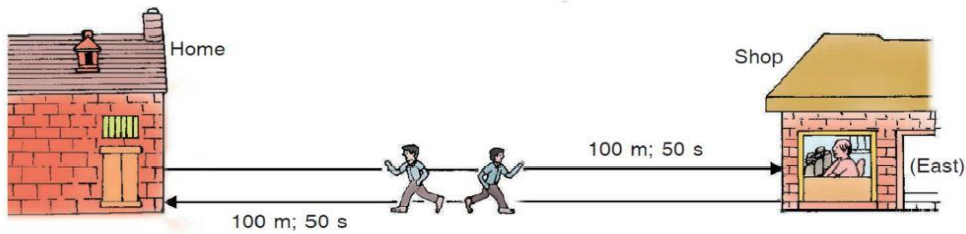


- (a) Indicate the physical states of water at A and E.  
 (b) Why temperature remains constant during change of state.

19 **Read the following and answer questions (i) and (ii)**

2

Suppose the boy first runs a distance of 100 metres in 50 seconds in going from his home to the shop in the East direction, and then runs a distance of 100 metres again in 50 seconds in the reverse direction from the shop to reach back home from where he started



- (i) Find the speed of the boy.  
 (ii) Find the Velocity of the boy.

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