Indian School Al Wadi Al Kabir
Pre Mid-term Examination (2025-2026)

Class: IX | Subject: SCIENCE(086) | Max. marks: 30
Date: 18/05/2025 | SET-II | Time: 1 hour

General Instructions:

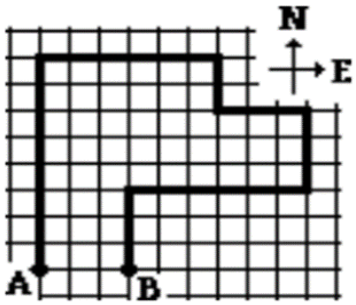
i) All the questions are compulsory.
ii) The question paper has five sections and 14 questions.
iii) Section–A has 6 questions of 1 mark each.
Section–B has 2 questions of 2 marks each.
Section–C has 2 questions of 3 marks each.
Section–D has 1 question of 5 marks.
Section -E has 3 case-based questions of 3 marks each.
iv) Internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.

SECTION - A

Select and write one most appropriate option out of the four options given for each of the questions 1 – 6

Q.NO	QUESTIONS	MARKS
1	A boy walks 10m on a straight path, moving away from a lamp pole in a garden, and walks 5m back on the same path. What is the displacement of the boy from the lamp pole? (A) 0m (B) 5m (C) 10m (D) 15m	1
2	A form of matter that has no fixed shape but has a fixed volume. An example of this form of matter is_____. (A) carbon dioxide (B) ice (C) water vapor (D) kerosene	1
3	Choose the correct statement. (A) Schleiden and Schwann discovered the cell. (B) Robert Hooke coined the term ‘protoplasm’. (C) Robert Brown discovered the Nucleus. (D) Purkinje proposed the cell theory.	1
For questions 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 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.		
4	**Assertion(A)**: The average speed of a body over a given interval of time is equal to the average velocity of the body in the same interval of time if a body moves in a straight line in one direction. **Reason(R)**: In this case, the distance travelled by a body is equal to the displacement of the body.	1
5	**Assertion (A):** A gas can easily be compressed by applying pressure. **Reason (R):** Since the inter-particle spaces between gases are very large, they can be decreased by applying pressure.	1
6	**Assertion (A):** The cell is the fundamental structural and functional unit of all living organisms. **Reason (R):** Anything less than a complete structure of a cell does not ensure independent living.	1
SECTION – B **Q. no. 7 and 8 are very short answer questions**		
7	Give a reason. (a) We can easily move our hand in the air, but to do the same through a plank of wood, we need a karate expert. (b) Diffusion of a solid in another solid is a very slow process.	2
8	**Attempt either option (a) or (b).** (a) What is endocytosis? Why is endocytosis found in animals only? **OR** (b) (i) Why is the cell called the structural and functional unit of life? (ii) Give a one-point difference between the plasma membrane and the cell wall.	2
SECTION - C **Q. no. 9 and 10 are short answer questions.**		
9	**Attempt either option (a) or (b).** (a) (i) Convert the following. (I) 300 K to Celsius scale (II) 25^{o} C to Kelvin scale (ii) If the melting point of an object A is high, then what state do you expect it to be at room temperature? **OR** (b) (i) Define the following. (I) Rigidity (II) Fluidity (ii) Arrange the following substances in the increasing order of force of attraction between the particles: water, sugar and oxygen.	3
10	(a) Draw a neat and labelled diagram to show the basic components of a cell.	3

<table>
<tr><td></td><td>(b) Why can fungi and bacteria tolerate greater changes in their surrounding medium compared to animal cells?</td><td></td></tr>
<tr><td colspan="3">SECTION - D
Q. no. 11 is a long-answer question</td></tr>
<tr><td>11</td><td>Attempt either option (a) or (b).
(a) Observe the diagram below. A person starts at A, walks along the bold path and finishes at B. Each square is 1 km along its edge. Use the diagram in answering the following questions.
 

(i) What is the distance covered and the displacement experienced by the person?
(ii) Write any two differences between distance and displacement.
(iii) If the person travels from Stop A to Stop B with a speed of 36 km/h and then returns back to A with a speed of 54 km/h, find the average speed of the car
OR
(b) (i) Define acceleration and state its SI unit. Is acceleration a scalar or vector quantity?
(ii) For motion along a straight line, when do we consider the acceleration to be -
(I) positive
(II) negative
(iii) The speedometer readings of a car are shown below. Find the acceleration of the car. (in m/s^2)
<table>
<tr><td>Time</td><td>Speedometer</td></tr>
<tr><td>9:25 am</td><td>36 km/h</td></tr>
<tr><td>9:45 am</td><td>72 km/h</td></tr>
</table></td><td>5</td></tr>
<tr><td colspan="3">SECTION – E
Q.no. 12,13, and 14 are source-based/case-based questions with 3 short sub-parts.</td></tr>
<tr><td>12</td><td>The table shows the distance covered by three cars A, B and C at different time of a day.</td><td>3</td></tr>
</table>

	<table><tr><th></th><th>Car A</th><th>Car B</th><th>Car C</th></tr><tr><th>Time</th><th>Distance Travelled (km)</th><th>Distance Travelled (km)</th><th>Distance Travelled (km)</th></tr><tr><td>1:00 PM</td><td>0</td><td>0</td><td>0</td></tr><tr><td>1:30 PM</td><td>2</td><td>2</td><td>1</td></tr><tr><td>2:00 PM</td><td>5</td><td>4</td><td>3</td></tr><tr><td>2:30 PM</td><td>7</td><td>6</td><td>4</td></tr></table>	
	(a) Analyse the table and classify the cars into uniform motion and non-uniform motion.	
	(b) Differentiate between uniform and non-uniform motion.	
	(c) Find the speed of **car A** between 2:00 pm and 2:30 pm.	
13	Riya was helping her mother in the kitchen during summer vacation. She noticed that when water was heated in a kettle, steam started coming out. Later, she saw her mother putting camphor in the room, and after some time, it disappeared.	3
	(a) Define latent heat of vapourisation.	
	(b) What change in the state of matter occurs in the case of camphor? What is this process called?	
	(c) What is dry ice?	
14	Water obeys the law of diffusion. The movement of water molecules through such a selectively permeable membrane is called osmosis. The movement of water across the plasma membrane is also affected by the amount of substance dissolved in water. Thus, osmosis is the net diffusion of water across a selectively permeable membrane toward a higher solute concentration. An experimental setup was prepared by students, which consisted of two beakers. Beaker A had water to which some raisins had been added. In beaker B saturated sugar solution was put in which some raisins had been added. The setup was kept overnight.	3
	(a) What will be the difference in the physical states of raisins as observed in the two beakers?	
	(b) Which property of the cell membrane has resulted in the observations?	
	(c) What is an isotonic solution? Name the type of solution in each beaker with respect to the raisins.	