

General Instructions:

- All questions are compulsory.
- The question paper has five sections and 20 questions. All questions are compulsory.
- **Section – A** has 11 questions of 1 mark each; **Section – B** has 3 questions of 2 marks each; **Section – C** has 3 questions of 3 marks each; **Section – D** has 2 questions of 5 marks each and **Section – E** has 1 Case based question of 4 marks.
- Internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.

SECTION-A

1.	<p>Which of the following statements about evaporation is incorrect?</p> <p>1. It is bulk phenomena. 2. It is a fast process. 3. It takes place at all temperatures.</p> <p>(a) 2 and 3 </p>
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	(a) Car A is faster than car D. (b) Car B is the slowest. (c) Car D is faster than car C. (d) Car C is the slowest.	
6.	Some crushed ice is put in a test tube and warmed. The ice melts because its particles (a) change their size (b) gain heat energy and escape (c) gain heat energy and become closer (d) gain heat energy and move away from their fixed positions	1
7.	Organelle which plays an important role in detoxification of drugs and toxins is: (a) Golgi apparatus (b) Lysosomes (c) Vacuoles (d) Smooth ER	1
8.	The numerical ratio of displacement to distance for a moving object is (a) always less than 1 (b) always equal to 1 (c) always more than 1 (d) equal or less than 1	1
9.	Plasmolysis in a plant cell is defined as: (a) Break down (lysis) of plasma membrane in hypotonic medium (b) Shrinkage of cytoplasm in hypertonic medium (c) Shrinkage of nucleoplasm (d) None of the above	1
10.	A train is moving with constant velocity of 40 m/s. How much distance will it cover in the next 3 minutes? (a) 120 meters (b) 4800 meters (c) 7200 meters (d) none of these	1
11.	A cell will swell up if: (a) The concentration of water molecules in the cell is higher than the concentration of water molecules in surrounding medium. (b) The concentration of water molecules in surrounding medium is higher than water molecules concentration in the cell. (c) The concentration of water molecules is same in the cell and in the surrounding medium. (d) Concentration of water molecules does not matter.	1
SECTION-B		
12.	A body travels in a semi-circular path of radius 10 m starting its motion from point 'A' to point 'B'. Calculate the distance and displacement.	2
13.	Differentiate between (i) The functions of RER and SER (ii) Plasma membrane and cell wall.	2
14.	With the help of an example, explain how diffusion of gases in water is essential?	2

SECTION-C

- 15.** Observe the given figure and answer the questions.
 (a) What has happened to cell A and B? Explain.
 (b) Identify the type of solution into which cells A and B are placed.
 (c) Name and explain the process that has taken place in cells A and B.
- (A) (B)
- OR**
- Give the differences between prokaryotic cells and eukaryotic cells.

- 16.** The brakes applied to a car produce an acceleration of 6 ms^{-2} in the opposite direction to the motion. If the car takes 2s to stop after the application of brakes, calculate the distance it travels during this time.

- 17.** You are given the following substances with their melting and boiling points.
- | Substance | Melting point ($^{\circ}\text{C}$) | Boiling point ($^{\circ}\text{C}$) |
|-----------|--------------------------------------|--------------------------------------|
| X | -219 | -183 |
| Y | 119 | 445 |
| Z | - 15 | 78 |
- Identify the physical states of X, Y and Z at room temperature (30°C).
- OR**
- What do you mean by the latent heat of fusion and vapourisation?

SECTION-D

- 18.** Draw the diagram to show animal cell and label the following parts:
 (a) Power house of the cell,
 (b) Suicidal bag,
 (c) Organelle which helps in protein synthesis,
 (d) Organelle which helps during cell division,
 (e) Organelle which helps in packaging, transporting of proteins and lipids.
- 19.** Comment on the following statements:(Answer any five of these)
 (a) Evaporation causes cooling.
 (b) Why do we see water droplets on the outer surface of a glass containing ice cold water?
 (c) Rate of evaporation of an aqueous solution decrease with increase in humidity.
 (d) Cotton is solid but it floats on water. Why?
 (e) Ice is solid at 0°C , while water is liquid at room temperature.
 (f) Sugar crystals dissolve faster in hot water than cold water.
- OR**
- Explain giving examples the various factors on which rate of evaporation depends.

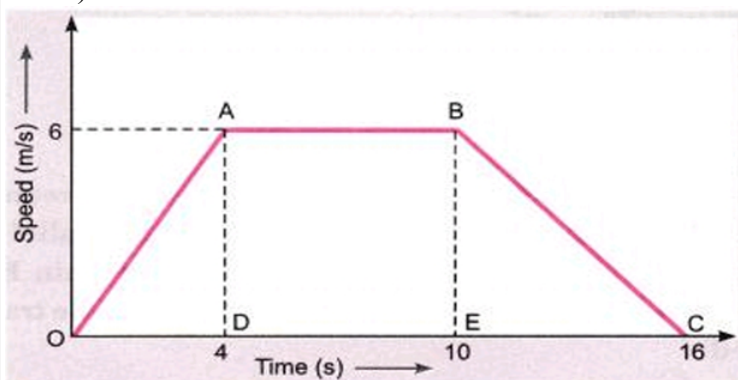
SECTION-E

20.

CASE STUDY

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Study the speed time graph of a body given here and answer the following questions: (Answer any four of these)



- (a) What type of motion is represented by OA?
- (b) What type of motion is represented by AB?
- (c) What type of motion is represented by BC?
- (d) Find out the acceleration of the body.
- (e) Find out the distance travelled by the body from A to B.
