



PRE-MIDTERM-2025 (SET-B)

CLASS-IX

SUBJECT-SCIENCE

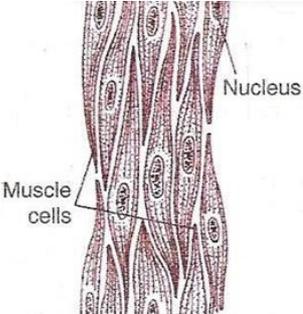
TIME ALLOWED: 3 HRS

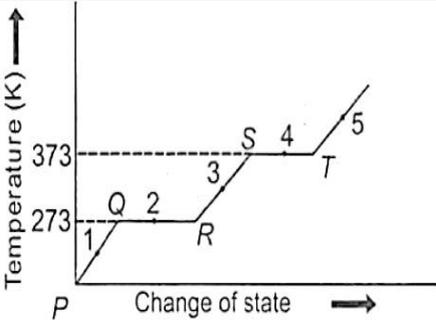
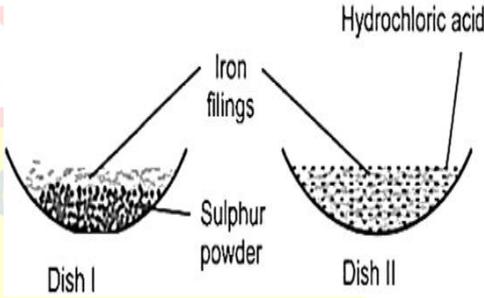
MAX. MARKS : 80

SECTION - A (BIOLOGY)

1	Which of the following is an incorrect pair? 1.Lysosome - Secretory granules. 2.Nucleus - Brain of the cell 3.Mitochondria - a powerhouse of the cell 3.Chloroplast - Kitchen of the cell a) (B) b) (D) c) (A) d) (C)	[1]
2	Select the incorrect statement. 1.Osmosis is a slow process, occurs down the concentration gradient and does not expend energy. 2.Electron microscope uses very high voltage electricity. It uses electromagnets instead of glass lenses and beam of electrons instead of light. 3.A semipermeable membrane doesnot allow both solvent and solute molecules to pass through it. 4.Active transport of materials is rapid and usually occurs against the concentration gradient involving carrier proteins and energy in the form of ATP. a) Statement (i) is correct. b) Statement (iv) is correct. c) Statement (ii) is correct. d) Statement (iii) is correct.	[1]
3	Which of the following statements is incorrect regarding Endoplasmic reticulum? a) SER helps in detoxification in the liver of vertebrates. b) None of these c) ER helps in the transport of materials from one part of the cell to another. d) RER helps in the synthesis of proteins.	[1]
4	1 μ m is a) 10^{-3} m b) 10^{-6} m c) 10^{-10} m d) 10^{-9} m	[1]
5	Bone matrix is rich in a) Phosphorus and potassium b) Calcium and phosphorus c) Fluoride and calcium d) Calcium of potassium	[1]

6	<p>A permanent tissue is described as complex tissue when it has</p> <p>a) more than one type of cells, performing different functions</p> <p>b) one type of cells, performing two or more different functions</p> <p>c) one type of cells, performing one function</p> <p>d) more than one type of cells, performing one common function</p>	[1]																		
7	<p>Select the incorrect differences between collenchyma and scierenchyma.</p> <table border="1" data-bbox="443 481 1141 891"> <thead> <tr> <th></th> <th>Collenchyma</th> <th>Scierenchyma</th> </tr> </thead> <tbody> <tr> <td>(i)</td> <td>It is made up of dead cells.</td> <td>Its cells are living</td> </tr> <tr> <td>(ii)</td> <td>Lumen or cell cavity is wide.</td> <td>Lumen or cell cavity is usually narrow.</td> </tr> <tr> <td>(iii)</td> <td>It provides hardness to the region where it occurs.</td> <td>It keeps the organ soft.</td> </tr> <tr> <td>(iv)</td> <td>Wall thickening is not uniform.</td> <td>Wall thickening is uniform.</td> </tr> <tr> <td>(v)</td> <td>Pits are simple and straight</td> <td>Pits are simple, oblique and may be branched.</td> </tr> </tbody> </table> <p>a) (i), (iii) and (iv) only</p> <p>b) (i) and (iv) only</p> <p>c) (ii), (iv) and (v) only</p> <p>d) (i) and (iii) only</p>		Collenchyma	Scierenchyma	(i)	It is made up of dead cells.	Its cells are living	(ii)	Lumen or cell cavity is wide.	Lumen or cell cavity is usually narrow.	(iii)	It provides hardness to the region where it occurs.	It keeps the organ soft.	(iv)	Wall thickening is not uniform.	Wall thickening is uniform.	(v)	Pits are simple and straight	Pits are simple, oblique and may be branched.	[1]
	Collenchyma	Scierenchyma																		
(i)	It is made up of dead cells.	Its cells are living																		
(ii)	Lumen or cell cavity is wide.	Lumen or cell cavity is usually narrow.																		
(iii)	It provides hardness to the region where it occurs.	It keeps the organ soft.																		
(iv)	Wall thickening is not uniform.	Wall thickening is uniform.																		
(v)	Pits are simple and straight	Pits are simple, oblique and may be branched.																		
8	<p>Assertion (A): Mitochondria, nucleus, and chloroplast are regarded as semi - autonomous cell organelles.</p> <p>Reason (R): These organelles contain their own DNA, ribosomes and replicate independently of the nucleus.</p> <p>a) Both A and R are true and R is the correct explanation of A.</p> <p>b) Both A and R are true and R is not the correct explanation of A.</p> <p>c) A is true and R is false.</p> <p>d) A is false and R is true.</p>	[1]																		
9	<p>Assertion (A): Animals of colder regions and fishes of cold water have a thicker layer of subcutaneous fat.</p> <p>Reason (R): The thick layer of subcutaneous fat acts as an insulator and prevents the heat of the body to escape out. The layer of fat acts as subcutaneous insulation of body for thermoregulation.</p> <p>a) Both A and R are true and R is the correct explanation of A.</p> <p>b) Both A and R are true but R is not the correct explanation of A.</p> <p>c) A is true but R is false.</p> <p>d) A is false but R is true.</p>	[1]																		
10	Briefly describe three important parts of cell.	[2]																		

11	Differentiate between rough and smooth endoplasmic reticulum. How is the endoplasmic reticulum important for membrane biogenesis?	[2]
12	Write the differences between xylem and phloem.	[2]
13	What is prokaryotic cell? Differentiate between prokaryotic cell & eukaryotic cell?	[3]
14	<p>Observe the following diagram and answer the following questions:</p> <ol style="list-style-type: none"> Identify the type of tissue mentioned in the given figure. Write any two characteristics of the type of tissue mentioned in the given figure. Where is the given tissue found in our body? What is the nature of the given tissue mentioned in the diagram? 	[3]
		
15	Draw a well - labeled diagram of a eukaryotic nucleus. How is it different from the nucleoid?	[5]
16	<p>Read the following text carefully and answer the questions that follow:</p> <p>Plant tissue is consists of meristematic tissue and permanent tissue. Meristematic tissue which is responsible for the growth of plants they are dividing tissue and permanent tissue provides permanent shape, size, and function to the plant they are also further classified as simple permanent tissue and complex permanent tissue. The plant tissue is responsible for performing various functions such as providing flexibility to plant parts as to stalk which can bend easily without breaking while some provide strength to the plant some of them have modified themselves to provide floatation in an aquatic plant.</p> <ol style="list-style-type: none"> Which part of the plant is responsible for growth of tip of stem and root? (1) Which type of tissue present in the aquatic plants how it helps the aquatic plant to float?(1) Which plant tissue provide flexibility? (2) <p style="text-align: center;">OR</p> <p>Why husk of the coconut is hard and stiff? (2)</p>	[4]
SECTION-B (CHEMISTRY)		
17	<p>When acetone or nail polish remover is applied cooling is experienced due to which factor?</p> <ol style="list-style-type: none"> Evaporation of acetone from the nail Reaction of nail polish with acetone Boiling of acetone Reaction of acetone with skin 	[1]
18	Study the given heating curve of substance X carefully and select the correct statement.	[1]

	<p>a) Substance X exists in solid state at point 1, in liquid state at point 3 and in gaseous state at point 5.</p> <p>b) All of these</p> <p>c) At QR, matter exists both in solid and liquid states, while at ST matter exists both in liquid and gaseous states.</p> <p>d) QR represents latent heat of fusion, while ST represents latent heat of vaporisation.</p>		
19	<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</p> <p>b) 273 K, 278 K and 543 K</p> <p>c) 298 K, 300 K and 338 K</p> <p>d) 298 K, 310 K and 338 K</p>	[1]	
20	<p>Which of the following factors are responsible for the change of state of solid CO₂ into vapours?</p> <p>a) Increase in temperature</p> <p>b) Increase in pressure</p> <p>c) Decrease in pressure</p> <p>d) Both decrease in pressure and an increase in temperature</p>	[1]	
21	<p>A food sample turned blue - black after addition of a few drops of iodine solution. This sample contains:</p> <p>a) protein b) fat c) glucose d) starch</p>	[1]	
22	<p>Neha took two China dishes and marked them as I and II. In China dish I, she mixed iron filings and sulphur powder. In China dish II, she mixed iron filings and dilute hydrochloric acid. Which of the following statements is correct regarding this activity?</p> <p>a) In China dish II, a new compound is formed, which is different from iron filings and dilute hydrochloric acid.</p> <p>b) All of these</p> <p>c) A colourless and odourless gas comes out from China dish II.</p> <p>d) In China dish I, a mixture is formed, where iron filings and sulphur powder can be seen separately.</p>		[1]
23	<p>Which one of the following will result in the formation of a mixture?</p> <p>a) Agitating a detergent with water in a washing machine</p> <p>b) Crushing of a marble tile into small particles</p> <p>c) Breaking of ice cubes into small pieces</p> <p>d) Adding sodium metal to water</p>	[1]	

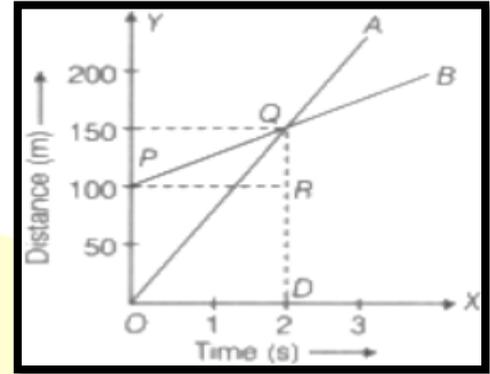
24	<p>Assertion (A): True solution exhibits Tyndall effect.</p> <p>Reason (R): Particles are very large in size.</p> <p>a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true.</p>	[1]
25	<p>When heat is being supplied to a solid, then what does the heat energy do to the particles of solid?</p>	[2]
26	<p>Give reasons (a) A gas fills completely the vessel in which it is kept. (b) A gas exerts pressure on the walls of the container. (c) A wooden table should be called a solid. (d) We can easily move our hand in air but to do the same through a solid block of wood we need a karate expert.</p> <p style="text-align: center;">OR</p> <p>Distinguish between : Evaporation and boiling</p>	[3]
27	<p>Comment on the following statements:</p> <p>(a) Evaporation causes cooling. (b) Rate of evaporation of an aqueous solution decreases with increase in humidity. (c) Sponge though compressible is a solid. (d) Ice is solid at 0°C, while water is liquid at room temperature. (e) Sugar crystals dissolve faster in hot water than cold water.</p>	[5]
28	<p>Why do not the dispersed phase particles in a colloidal solution combine with one other?</p>	[3]
29	<p>Read the following text carefully and answer the questions that follow:</p> <p>Homogeneous mixtures are regarded as solutions or true solutions. Heterogeneous mixtures are of two types. These are suspensions and colloidal solutions. These differ in the size of the particles responsible for the difference in their properties. In a suspension, the particle size is more than 10^{-5} cm whereas in a colloidal solution, it ranges between 10^{-5} cm to 10^{-7} cm. The two phases which constitute colloidal solutions, are dispersed phase and dispersion medium. Based upon their nature, the colloidal solutions are classified into eight types. The mixture of the non - reacting gases is always homogeneous irrespective of their nature. Therefore, it is not a colloidal solution.</p> <ol style="list-style-type: none"> 1. Scattering of light occurs when a beam of light is passed through Blood. Why? (1) 2. What is Tyndall effect? (1) 3. What is called colloidal solution? Also write down Properties (2) <p style="text-align: center;">OR</p> <p>Give an example of colloidal solution and identified their dispersed phase and dispersion medium? (2)</p>	[4]

SECTION-C (PHYSICS)

30	<p>The diagram shows the velocity - time graph of two moving cars P and Q. The graph indicates that</p> <p>a) The velocity of car P is increasing at a decreasing rate from 40 s to 45 s in same direction.</p> <p>b) Car Q is moving with a constant acceleration from 0 to 40 seconds.</p> <p>c) After 20 s, P is behind Q.</p> <p>d) Acceleration of the car Q is not zero at any point during whole journey.</p>	[1]
31	<p>Assertion (A): When the displacement of a body is directly proportional to the square of the time. Then the body is moving with uniform acceleration.</p> <p>Reason (R): The slope of velocity - time graph with time axis gives acceleration.</p> <p>a) Both A and R are true and R is the correct explanation of A.</p> <p>b) Both A and R are true but R is not the correct explanation of A.</p> <p>c) A is true but R is false.</p> <p>d) A is false but R is true.</p>	[1]
32	<p>A player caught a cricket ball of mass 200 g moving at a rate 60 m/s. If the catching process completes in 0.4 s, the force of the blow exerted by the ball on the hand of the player is equal to</p> <p>a) 3 N b) 150 N c) 300 N d) 30 N</p>	[1]
33	Distinguish between speed and velocity.	[2]
34	Why does a boat tend to leave the shore, when passengers are alighting from it?	[2]
35	<p>A bus starting from rest moves with a uniform acceleration of 0.1 m s^{-2} for 2 minutes. Find:</p> <p>1. the speed acquired. 2. the distance travelled.</p>	[3]
36	<p>Look at the diagram below and answer the following questions:</p> <p>1. When a force is applied through the free end of the spring balance A, then the reading on the spring balance A is 15 g - wt. What will be the measure of the reading shown by spring balance B?</p> <p>2. Write the reasons for your answer.</p> <p>3. Name the force that balance A exerts on balance B and the force of balance B on balance A.</p>	[3]
37	<p>Give reason for the following:</p> <p>1. Road accidents occurring due to high speeds are much worse than accidents due to low speeds of vehicles.</p> <p>2. When a motorcar makes a sharp turn at a high - speed, passengers tend to get thrown to one side.</p>	[3]

38 The distance - time graph of the two trains is shown in the figure. The trains start simultaneously in the same direction.

1. How much A is ahead of B when the motion starts?
2. What is the speed of B?
3. When and where will A catch B?
4. What is the difference between speeds of A and B?
5. Is the speed of both the trains uniform or non-uniform? Justify your answer.

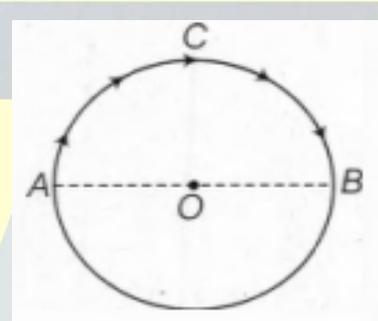


[5]

OR

An insect moves along a circular path of radius 10 cm with a constant speed. It takes 1 min to move from a point on the path to the diametrically opposite point, find

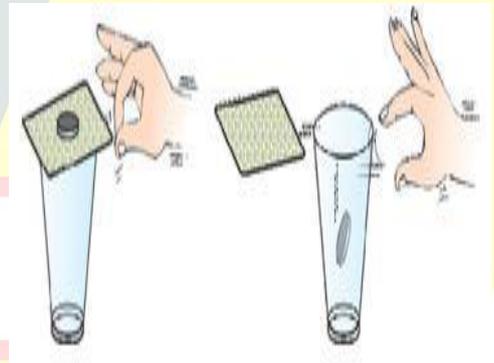
1. the distance covered,
2. the speed,
3. the displacement and
4. the average velocity.



39 Read the following text carefully and answer the questions that follow:

All objects resist a change in their state of motion. In a qualitative way, the tendency of undisturbed objects to stay at rest or to keep moving with the same velocity is called inertia. The first law of motion is also known as the law of inertia.

1. Which object will have more inertia one is of mass 50kgs and the other is 30kgs? (1)
2. what is inertia? State newtons first law of motion (1)
3. What scientific explanation best describes the phenomenon of dust particles coming out of a hanging carpet when beaten with a stick? (2)



OR

Why doesn't an athlete come to rest immediately after crossing the finish line? (2)

[4]