



GRADE: IX Date:03-10-2024	TERM I EXAMINATION (2024-25) SCIENCE MS	Marks: 80 Time: 3h
--	--	-------------------------------------

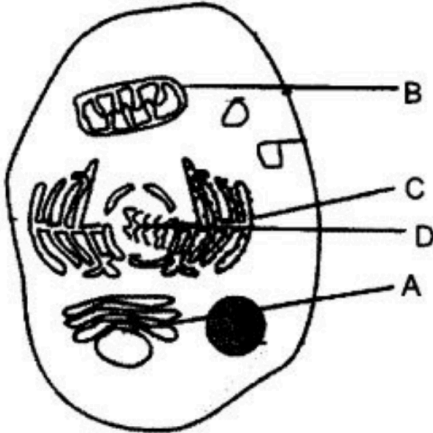
Q.No.	Questions	Mark
	Section A	
	Choose the correct answer	
1	The animal cell which does not possess a nucleus is (c) red blood cell	1
2	When a crystal of potassium permanganate is placed at the bottom of the water in a beaker, the water in the whole beaker turns purple on its own, even without stirring. This is an example of: (c) diffusion	1
3	It is difficult for a fireman to hold a hose that ejects a large amount of water at a high velocity, which law of motion explains it? Second	1
4	The organelle that helps in membrane biogenesis is (c) endoplasmic reticulum	1
5	Which one of the following is not a chemical change? (c) sublimation of naphthalene.	1

6	The inertia of an object is measured by its (b)Mass	1
7	The opening and closing of stomata are due to (b) osmosis	1
8	Milk is an example of: b)Emulsion	1
9	What is the SI unit of Force? (c)N	1
10	The inner membrane of mitochondria is folded because (c) it increases the surface area	1
11	The Tyndall effect is seen in: c) Colloids	1
12	How does the force of gravitation between two objects change when the distance between them is reduced to half? a) 4 times increased	1
13	Proteins are formed in (d) ribosomes	1
14	Convert 393K to Celsius scale: c) 120°C	1
15	The slope of the Velocity time graph gives (c)acceleration	1

16	The nucleus of the cell was discovered by (c) Robert Brown	1
17	A particle is moving in a circular path of radius r , the distance after half a circle would be (b) πr	1
18	The minimum number of unequal forces that can make zero resultant is (a) two	1
19	The solution in which a cell will gain water by osmosis is termed as (c) hypotonic solution	1
20	The weight of a body is measured to be 60 N on the earth. If it is taken to the moon, its weight will be (c) 10 N	1
Section B VERY SHORT ANSWER QUESTION		
21	What are plastids? Name the different types of plastids found in a plant cell. Plastids are double membrane-bound organelles found in plant cells. They are essential for various functions, including storage and photosynthesis. There are three main types of plastids: 1. Leucoplasts 2. Chromoplasts 3. Chloroplasts	2
22	Why do we see water droplets on the outer surface of a glass containing ice-cold water? Ans. Water droplets are the condensed water vapour present in the atmosphere around the glass.	2

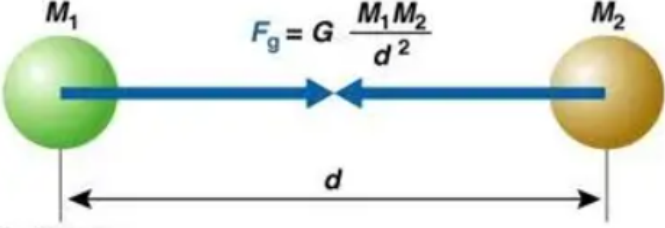
23	<p>Distinguish between mass and weight.</p> <p>Mass is simply the measure of the amount of matter in a body Weight is the measure of the amount of force acting on a mass due to acceleration due to gravity.</p> <ul style="list-style-type: none"> • Mass is always constant for a body and there are several formulas to calculate mass. • One way to calculate mass is: <p>Mass = volume × density</p> <ul style="list-style-type: none"> • Weight is the measure of the gravitational force acting on a body. • Weight can be calculated from the following formula: <p>Weight = mass × acceleration due to gravity</p>	2
24	<p>State the difference between smooth endoplasmic reticulum and rough endoplasmic reticulum.</p> <p>smooth endoplasmic reticulum (SER), meshwork of fine disklike tubular membrane vesicles, part of a continuous membrane organelle within the cytoplasm of eukaryotic cells, that is involved in the synthesis and storage of lipids, including cholesterol and phospholipids, which are used in the production of new cellular</p>	2
25	<p>A solution contains 60 g of common salt in 340 g of water. Calculate the concentration in terms of mass by mass percentage of the solution.</p> <p>Ans: 15%</p>	2
26	<p>Third law of motion To reduce the momentum</p>	2
<p>Section C SHORT ANSWER QUESTION</p>		
27	<p>Why do plant cells have more in numbers and big-sized vacuoles as compared to animal cells?</p> <p>The vacuoles are membrane-bound organelles filled with water having organic and inorganic molecules. The plants have</p>	3

	no defined excretory systems. But animals have defined and well organized excretory systems. Thus, the plant cells use their vacuoles to store excretory products. But animal cells use their vacuoles only for temporary food storage.	
28	<p>a) Why do gases have neither a fixed shape nor a fixed volume? Ans: Less intermolecular force of attraction, huge intermolecular space, and more movement of particles.</p> <p>b) Why does our palm feel cold when we put some sanitizer or perfume on it? Ans: It evaporates by absorbing heat from our palms, thereby making our palms cold.</p>	3
29	<p>A train is moving on a straight and levelled track at a speed of 72 km/hr. and passes an electric post in 3 S. Find the time taken by the train to pass a bridge of length 540 m. speed=distance/time Distance travelled by train in 3 s=length of the train distance=60 m time=distance/speed 600/20=30 s</p>	3
30	<p>State the law of conservation of momentum and prove mathematically that momentum before and after the collision of two objects moving along a straight line are equal and opposite. Momentum is conserved before and after the collision. proof: $MAVA + MBVB = MAUA + MBUB$</p>	3
31	<p>What is a suspension? Write down the properties of the suspension and give one example. Ans: Suspension is a heterogeneous mixture in which the solid particles are spread throughout the liquid without dissolving in it. Large particle size</p>	3

	Instability Light scattering	
32	<p>Label the figure and answer the questions:</p> <p>(i) A – It is the packaging organelle (ii) B – Provides energy (iii) C – helps in the transport of material (iv) D – Carries the information.</p>  <p style="text-align: center;">Animal Cell</p>	3
33	<p>What are the characteristics of particles of matter?</p> <p>a) The particles of matter are very, very small. b) The particles of matter have space between them. c) The particles of matter are constantly moving. d) The particles of matter attract each other. e) How can you separate a mixture of ammonium chloride and sodium chloride? Ans: By sublimation</p>	3
	<p>Section D LONG ANSWER QUESTIONS.</p>	
34	<p>a) Draw a neat labeled diagram of a plant cell and label its parts.</p>	5

	<p>b) Give five points of differences between plant cells and animal cells.</p> <table border="1"> <thead> <tr> <th>Plant cell</th> <th>Animal cell</th> </tr> </thead> <tbody> <tr> <td>3. Larger in size.</td> <td>3. Smaller in size.</td> </tr> <tr> <td>4. Plant cells have plastids.</td> <td>4. Animal cells do not have plastids.</td> </tr> <tr> <td>5. Centrosomes are absent in plant cells</td> <td>5. Animal cells have centrosomes.</td> </tr> <tr> <td>6. Plant cells do not have cilia.</td> <td>6. Animal cells have cilia.</td> </tr> </tbody> </table>	Plant cell	Animal cell	3. Larger in size.	3. Smaller in size.	4. Plant cells have plastids.	4. Animal cells do not have plastids.	5. Centrosomes are absent in plant cells	5. Animal cells have centrosomes.	6. Plant cells do not have cilia.	6. Animal cells have cilia.	
Plant cell	Animal cell											
3. Larger in size.	3. Smaller in size.											
4. Plant cells have plastids.	4. Animal cells do not have plastids.											
5. Centrosomes are absent in plant cells	5. Animal cells have centrosomes.											
6. Plant cells do not have cilia.	6. Animal cells have cilia.											
35	<p>a) List down the factors affecting evaporation. Ans: Temperature Humidity Speed of the wind Surface area</p> <p>b) Classify the following into elements and compounds: Sodium sulphate, Aluminium, water, and Beryllium. Ans: Elements - Al, Be Compounds - Sodium sulphate, water</p> <p>c) Give one method to liquefy a gas. Ans: By decreasing temperature and increasing pressure.</p>	5										
36	<p>A cricket fielder moves his arms backward in the direction of the ball while taking a catch why? State the second law of motion. Derive the mathematical expression for the second law of motion.</p> <p>To reduce the momentum</p> <p>The rate of change of momentum is proportional to applied unbalanced force in the direction of force</p> <p>Mathematical expression for $F=ma$</p>	5										
	<p>Section E CASE-BASED QUESTIONS</p>											
37	<p>Vasu was helping his mother in laying the table when they had some guests for dinner. Vasu was about to sprinkle salt on the salad for dressing. His mother</p>	4										

	<p>stopped him from doing so and told him that it was too early to sprinkle salt on the salad, he should do so only when they were seated for dinner.</p> <p>(a) What would happen if salt is sprinkled on the salad? Shrink</p> <p>(b) Which property of cells is seen in adding salt to it? Osmosis</p> <p>(c) What value of the cell wall Vasu is seen?</p> <p>d) What is endocytosis? Endocytosis is a process by which cells take in large molecules, particles, and fluids from their environment</p>	
38	<p>In a certain investigatory project, 150 ml of water is taken in each of the four beakers A, B, C, and D. Beakers A and B are maintained at temperature 25°C while C and D are maintained at temperature 65°C. Four crystals of copper sulphate of approximately the same mass (say 2g) are taken and two of them are ground into powder form. Now, crystals are added in beakers A and C while the powdered form of the salt is added in beakers B and D respectively. Mark the correct answer to each of the following questions:</p> <p>(i) In which beaker the intermixing will be the quickest? a) C b) D c) A d) B</p> <p>(ii) The rate of intermixing will be: a) Same in A and C b) Same in A and B c) Quicker in B than in A d) Slower in C as compared to that in A</p> <p>(iii) The colour of the solution after intermixing is: a) Greenish b) Bluish c) Pinkish d) Violet</p>	4

	<p>(iv) The phenomenon responsible for intermixing is called a) Diffusion of solid into a liquid b) Diffusion of liquid into solid c) Sedimentation d) Freezing</p>	
39	<p>Every object in the universe attracts every other object with a force that is proportional to the product of their masses ($m_1 \cdot m_2$) and inversely proportional to the square of the distance (d^2) between them. The force is along the line joining the centers of two objects.</p>  <p>(i) Gravitational force does not depend on (a) Masses of objects (b) Separation between objects (c) Charges on objects (d) None of these</p> <p>(ii) Force of gravitation varies with masses of objects as (a) Product of masses (b) Sum of masses (c) Difference of masses (d) None of these</p> <p>(iii) When the mass of one body is doubled then the force of gravitation will become (a) Force will remain the same (b) Force will become double (c) Force will become halved (d) None of these</p> <p>(iv) Two objects of masses 10kg and 20kg separated by a distance of 10m. What is the gravitational force between them? $G = 6.6 \cdot 10^{-7} \text{ N}$ $f = 6.6 \cdot 10^{-7} \cdot 10 \cdot 20 / 10 = 1.3 \cdot 10^{-5}$</p>	4