

CLASS-IX
MID TERM EXAMINATION (2023-24)
SCIENCE
MARKING KEY SET- A1/A2

Time Allowed: 3hr

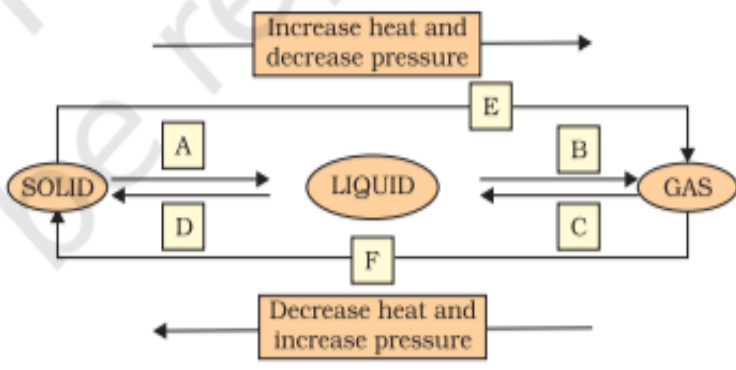
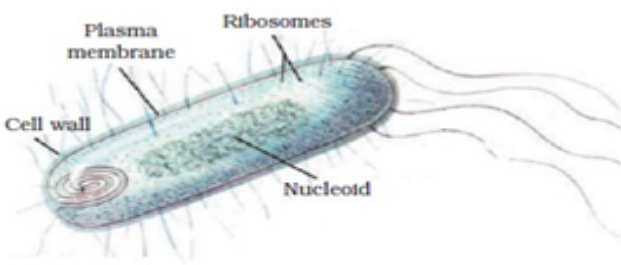
Max Marks: 80

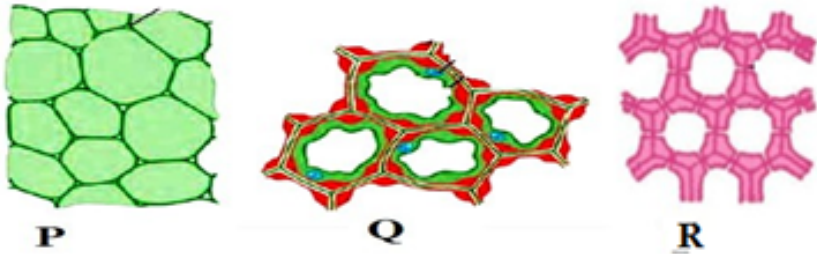
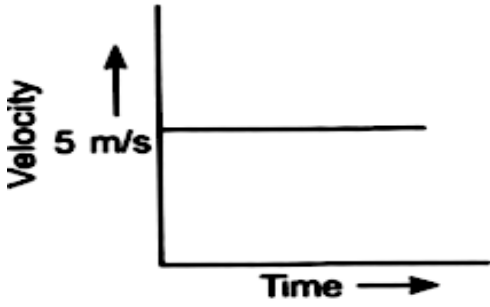
SECTION A			
Select and write one most appropriate option out of the four options given for each of the questions 1- 14.			
A1 QNo	A2 QNo	Expected Answers	Marks
1	2	On converting 25°C, 38°C and 66°C to Kelvin scale, the correct sequence of temperature will be: (a) 298 K, 311 K and 339 K (b) 298 K, 300 K and 338 K (c) 273 K, 278 K and 543 K (d) 298 K, 310 K and 338 K	1
2	1	In all the three states of water (i.e. ice, liquid and water vapour) , chemical composition of water: (a) is very different (b) remains same (c) sometimes same and sometimes different (d) none of the above	1
3	3	In which of the following conditions, the distance between the molecules of hydrogen gas would increase? (i) Increasing pressure on hydrogen contained in a closed container (ii) Some hydrogen gas leaking out of the container (iii) Increasing the volume of the container of hydrogen gas (iv) Adding more hydrogen gas to the container without increasing the volume of the container (c) (ii) and (iii) (a) (i) and (iii) (b) (i) and (iv) (d) (ii) and (iv)	1
4	4	Tincture iodine has antiseptic properties. This solution is made by dissolving: a) Iodine in potassium iodide b) Iodine in Vaseline c) Iodine in water	1

		d) Iodine in alcohol	
5	6	An example of liquid metal and liquid non-metal is (at room temperature): (a) Gallium, mercury (b) Mercury, chlorine (c) Mercury, bromine (d) Bromine, sulphur	1
6	5	Which of the following are homogeneous in nature? (i) ice (ii) wood (iii) soil (iv) air (a) (i) and (iii) (b) (ii) and (iv) (c) (i) and (iv) (d) (iii) and (iv)	1
7	7	Which of the following statements are true for pure substances? (i) Pure substances contain only one kind of particles (ii) Pure substances may be compounds or mixtures (iii) Pure substances have the same composition throughout (iv) Pure substances can be exemplified by all elements other than nickel (a) (i) and (ii) (b) (i) and (iii) (c) (iii) and (iv) (d) (ii) and (iii)	1
8	12	Out of the following, which cell is likely to burst when kept in a hypotonic solution? a) Onion peel. b) Bacterial cell c) De-shelled egg d) Yeast	1
9	10	Find the odd one out? a) Bacteria, b) <i>Amoeba</i> c) <i>Chlamydomonas</i> d) Rat	1

10	11	<p>Tissue is a group of similar kinds of cells specialized to perform a particular function in the body. Presence of tissues in a multicellular organism ensures:</p> <p>a) Faster development b) Division of labour c) Higher reproductive potential d) Body strength</p>	1
11	9	<p>Cell wall is not present in</p> <p>a) Bacterial cell b) Onion peel cell c) Rhoeo leaf cell d) Human cheek cell</p>	1
12	8	<p>Which of the following tissues is made up of dead cells?</p> <p>a) Parenchyma b) Sclerenchyma c) Collenchyma d) Epithelial tissue</p>	1
13	14	<p>The distance-time graph of a body is parallel to the time axis. The body must be</p> <p>(a) in uniform motion (b) at rest (c) in uniformly accelerated motion (d) in zig-zag motion</p>	1
14	13	<p>A passenger facing in the direction of a moving train tosses a coin which falls behind him. It means that motion of the train is</p> <p>(a) retarded (b) accelerated (c) uniform (d) along circular tracks .</p>	1
15	16	<p>In the relation $F = G \frac{M m}{d^2}$, the quantity G</p> <p>(a) depends on the value of g at the place of observation (b) is universal constant of nature (c) is greatest at the surface of the earth (d) is used only when the earth is one of the two masses.</p>	1

16	15	The slope of velocity-time graph represents a physical quantity which has the unit (a) m/s^2 (b) m^2 (c) m (d) m/s	1
<p>QNo 17 to 20 are Assertion - Reasoning questions These consist of two statements are given- Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below: (a) Both A and R are true, and R is the correct explanation of the assertion. (b) Both A and R are true, but R is not the correct explanation of the assertion. (c) A is true, but R is false. (d) A is false, but R is true.</p>			
17	17	Assertion(A) :A solution of table salt in a glass of water is homogeneous. Reason(R): A solution having different composition throughout is homogeneous. Ans. c, A is true, but R is false.	1
18	19	Assertion(A): The growth of plants occurs only in certain specific regions. Reason(R):The dividing tissue, also known as meristematic tissue, is located only at these points. a) Both A and R are true and R is the correct explanation of A.	1
19	18	Assertion(A): A living cell does not have the capacity to perform basic functions. Reason(R): The shape and size of cells are related to the specific function they perform. d) A is false, but R is true.	1
20	20	Assertion(A): If the distance between two bodies of mass m_1 and m_2 is increased by a factor of 5 ,the gravitational force is reduced to $1/25$ to its initial value. Reason(R) :The gravitational force is inversely proportional to the square of the distance between two bodies. ANS: (a)	1
<p style="text-align: center;">SECTION B Q No 21 to 26 are very short answer questions</p>			
21	21	Identify any four processes of interconversion out of A, B, C, D, E and F as shown in the following diagram.	$0.5 \times 4 = 2$

		 <p>Ans. A- (A) Solid to Liquid → Melting (or) fusion (or) liquefaction (B) Liquid to Gas → Evaporation (or) vaporisation (C) Gas to liquid → Condensation (D) Liquid to Solid → Solidification (E) Solid to Gas → Sublimation (F) Gas to Solid → solidification</p>	
22	24	<p>A1</p> <p>a) What is a prokaryotic cell? b) How does it differ from a eukaryotic cell w.r.t. the number of chromosomes?</p> <p>a) The cell that does not have a well- defined nucleus (without a nuclear membrane) is a Prokaryotic cell. b) Prokaryotic cells – have a single chromosome. Eukaryotic cells - have many chromosomes.</p> <p>A2</p> <p>Draw a prokaryotic cell and label any two parts.</p>  <p style="text-align: center;"><i>Prokaryotic cell</i></p>	<p>1+1</p> <p>1+1</p>
23	22	<p>The given figures depict the three types of simple permanent tissues in plants. Name them. Also specify the structural feature (visible in the diagram) that helped you in their identification.</p>	

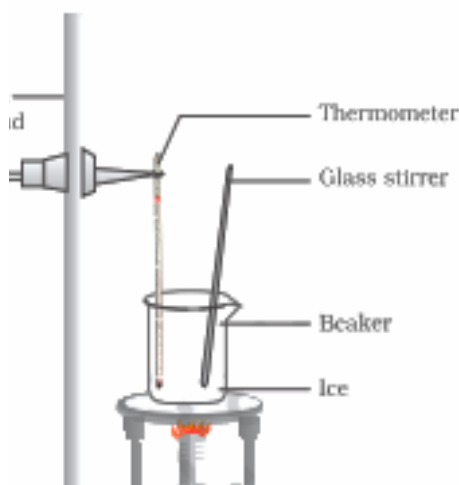
		 <p> P- Parenchyma Q- Collenchyma R- Sclerenchyma Cell wall </p>	0.5*4=2
24	23	<p>Which cell organelle is called the powerhouse of the cell? How many membranes does it have and how are they different from each other?</p> <p>Mitochondria are known as the powerhouses of the cell. Mitochondria have two membrane coverings. The outer membrane is smooth and porous while the inner membrane is deeply folded.</p>	0.5*4=2
25	26	<p>Velocity- time graph of a moving particle of mass 1kg is shown in figure.</p>  <p>(a) Is any unbalanced force acting on the moving particle? Justify your answer. (b) What is the SI unit of force?</p> <p>ANS:(a) No. as the particle is moving with a constant velocity of 5 m/s. (b) Newton</p>	<p>2</p> <p>½ 1 ½</p>

26	25	<p>Differentiate between average speed and average velocity (two points)</p> <p>OR</p> <p>Differentiate between distance and displacement (two points)</p> <p>ANS: Average speed :1. In non uniform motion,The average speed of any object is the total distance travelled by that object divided by the total time . 2.scalar</p> <p>Average Velocity: 1. The displacement with regards to the original position divided by the time. 2. vector</p> <p>OR</p> <p>Distance :1. Actual -Total path travelled by the moving body from the reference point. 2. scalar</p> <p>Displacement: 1.Shortest distance between initial and final position . 2. vector</p>	<p>2</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>
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SECTION C
Q No 27 to 33 are short answer questions

27	<p><u>Set A1</u></p> <div data-bbox="665 1113 1112 1606" data-label="Image"> </div> <p>(i) Identify the process shown in the above picture and define it. Ans. Sublimation. It is defined as a process in which a solid converts into gas directly without converting into liquid.</p> <p>(ii) What is the purpose of using a cotton plug at the end of the funnel? And.The cotton plug was used to prevent camphor vapours from escaping out.</p>	<p>2+1=3</p>
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Set A2



(i) Why does the temperature of the thermometer remain constant in the above situation ?

Ans. The temperature of a substance remains constant during melting and boiling points till the completion of melting and boiling because of latent heat of fusion used by the substances. Latent heat of fusion helps to overcome the force of attraction between particles of solid to change into liquid when they melt. Hence temperature remains constant.

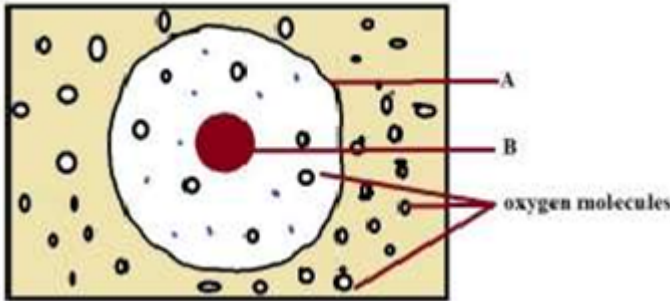
(ii) Arrange the following substances in the decreasing order of melting points:
Ice, Iron , sugar

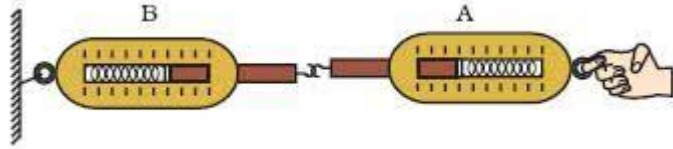
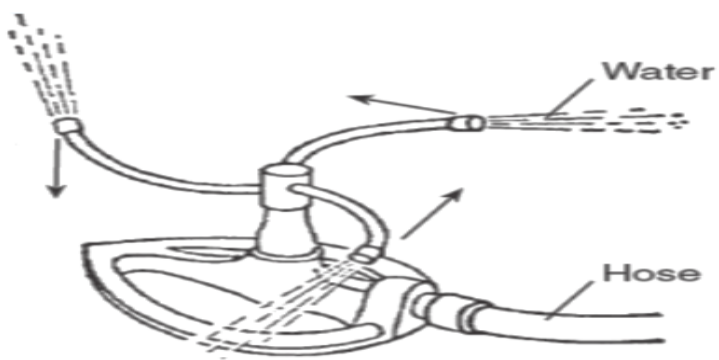
Ans. Iron > sugar > ice

(iii) Kinetic energy of particles of water in three vessels A, B and C are E_A , E_B and E_C respectively and $E_A > E_B > E_C$. Arrange the temperatures, T_A , T_B and T_C of water in the three vessels in increasing order.

Ans: $T_C < T_B < T_A$, the kinetic energy of particles is greater at higher temperature.

1+1+1
=3

28	28	<p>(i) Give any one example of the Tyndall effect observed in your surroundings. Ans. 1. The beam of light passing on screen in a theatre. 2. When light passes through a dark room. 3. Light passing through the canopy of a dense tree/ forest. (any one)</p> <p>(ii) Smoke and fog both are aerosols. In what way are they different? Ans. Both smoke and fog have gas as the dispersion medium (continuous phase). But the difference lies in dispersed phase .Dispersed phase in fog is liquid whereas in smoke it is solid (particulate matter).</p> <p style="text-align: center;">OR</p> <p>(i) Define the term ‘solubility’ in relation to a solution. How does it change with the change in temperature? Ans. The amount of the solute present in the saturated solution at this temperature is called its solubility. Solubility of a solute in a solvent increases with the increase in temperature and vice versa.</p> <p>(ii) How many grams of sodium carbonate is needed to make 8 % mass by mass percentage of sodium carbonate solution if the total mass of the solution is 160 g? Ans. Mass of solute (salt) = X g Mass of solution = 160 g Mass percentage of solution= Mass of solute / Mass of solution × 100 8 = X/160 × 100 X = 8 * 160 / 100 = 12.8 g</p>	<p>1+2= 3</p> <p>2+1=3</p>
29	30	<p>Observe the diagram given below and answer the questions that follow:</p>  <p>a) Identify the structure marked A. CELL MEMBRANE / PLASMA MEMBRANE</p> <p>b) How can you tell it is an animal cell and not a plant cell? Give one reason. NO CELL WALL/ CENTRALLY LOCATED NUCLEUS</p> <p>c) Oxygen will diffuse into the cell in the diagram. Why? (Use information from diagram)</p>	<p>1+1+1</p>

		AS ITS CONCENTRATION IS MORE OUTSIDE THE CELL	
30	29	<p>Name the following/ give the term</p> <p>(a) Chemical found in the walls of cork cells that makes them impervious to gases and water - Suberin</p> <p>(b) Tissue that helps aquatic plants float-Aerenchyma</p> <p>(c) The process of taking up a permanent shape, size, and a function by cells- Differentiation. (A1)</p> <p>The shrinkage or contraction of the contents of the cell away from the cell wall, when a plant cell is kept in a hypertonic solution- Plasmolysis (A2)</p>	1+1+1
30	29	<p>OR</p> <p>Name the two types of conducting tissues in plants. Differentiate between them on the basis of materials transported and the direction of transport.</p> <p>Xylem- conducts water and minerals from roots to the leaves, Unidirectional transport</p> <p>Phloem- conducts water and minerals from leaves to all parts of the plants, Bidirectional transport</p>	1+2
31	32	<p>(a) Look at the diagram above and answer the following questions:</p>  <p>When the force is applied through the free end of the spring balance A, the reading on the spring balance A is 20gwt. What will be the reading shown by the spring balance B ?</p> <p>(b) Water sprinkler used for the grass lawns that begin to rotate as soon as water is supplied. Explain how it works.</p>  <p>(c) Name and state the law involved in the above cases.</p>	3
			1

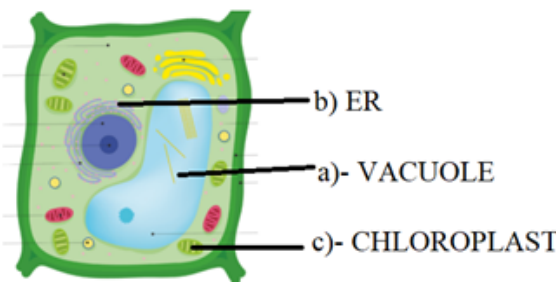
		<p>ANS: (a) 20 gwt</p> <p>(b) As soon as the water supplied to the sprinkler reaches its nozzle and it comes out of the nozzle, an equal and opposite force (reaction force) comes into existence.</p> <p>(c) Newton's third law - To every action there is an equal and opposite reaction. Action and reaction force act on different bodies.</p>	<p>1</p> <p>1</p>
32	31	<p>(a) What is uniform circular motion?</p> <p>(b) Consider the motion of an athlete in a circular path. Is it an accelerated motion? If yes then, What is the direction of an acceleration produced in it?</p> <p>(c) If the athlete takes t seconds to go once around the circular path of radius r, write down an expression for its speed "v".</p> <p>ANS: (a) When an object moves in a circular path with uniform speed.</p> <p>(b) Yes. Towards the centre of the circular path.</p> <p>(c) $v = 2\pi r/t$</p>	<p>3</p> <p>1 $\frac{1}{2} + \frac{1}{2}$</p> <p>1</p>
33		<p>(a) "A body weighs more at poles than at the equator" Do you agree ? If yes then explain ,why?</p> <p>(b) What is the weight in newtons of a 10 kg object on the moon and on the Earth? Given: acceleration due to gravity on the Moon = 1.63 m/s^2 and acceleration due to gravity on the Earth = 9.8 m/s^2</p> <p>ANS: (a) Yes. The shape of the earth is not a perfect sphere. which means that $R_{\text{eq}} > R_{\text{poles}}$ $g = GM/R^2$ and Weight = mg $g_{\text{poles}} > g_{\text{eq}}$ so $W_{\text{poles}} > W_{\text{eq}}$</p> <p>(b) Weight of an object on the moon = $1/6 \times$ Weight of an object on the Earth</p> <p>Also, Weight = Mass \times Acceleration Acceleration due to gravity, $g = 9.8 \text{ m/s}^2$ Therefore, weight of a 10 kg object on the Earth = $10 \times 9.8 = 98 \text{ N}$ And, weight of the same object on the moon = $\frac{1}{6} \times 98 = 16.3 \text{ N}$</p>	<p>3</p> <p>1</p> <p>2</p>
	33	<p>(a) Amit buys a few gram of gold at the poles as per the instruction of one of his friends. He hands over the same when he meets him at the equator. Will the</p>	

		<p>friend agree with the weight of gold bought when measured using a spring balance? If not, why?</p> <p>(b) How much would a 70 kg man weighs on the moon? What would be his weight on Earth ? Given: acceleration due to gravity on the Moon = 1.63 m/s^2 and acceleration due to gravity on the Earth = 9.8 m/s^2</p> <p>ANS: (a) no. The shape of the earth is not a perfect sphere. which means that $R_{eq} > R_{poles}$</p> <p>$g = GM/R^2$ and Weight = mg $g_{poles} > g_{eq}$ so $W_{poles} > W_{eq}$</p> <p>(b) Weight of an object on the moon = $1/6 \times$ Weight of an object on the Earth Weight = Mass \times Acceleration Acceleration due to gravity, $g = 9.8 \text{ m/s}^2$ Therefore, weight of a 70 kg object on the Earth = $70 \times 9.8 = 686 \text{ N}$ And, weight of the same object on the moon = $\frac{1}{6} \times 686 = 114.3 \text{ N}$</p>	<p>1</p> <p>2</p>
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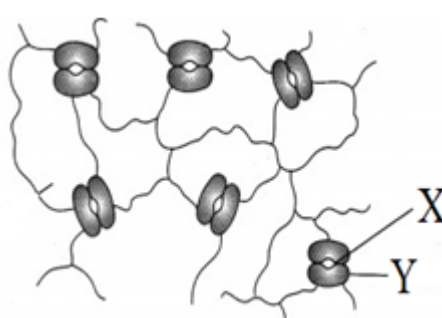
SECTION D
Q No 34 to 36 are Long answer questions

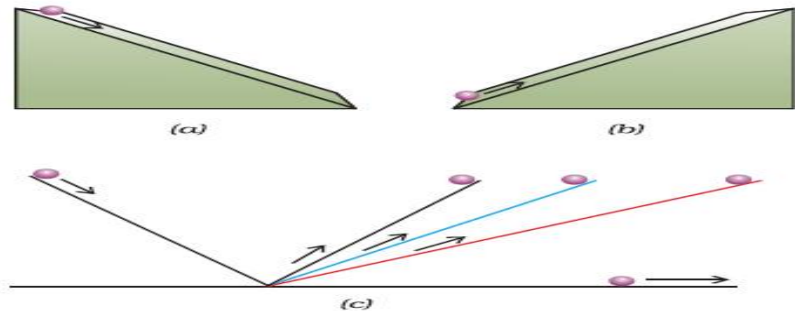
34	34	<p>(i) Explain the difference between Evaporation and Boiling by giving any two points of difference for each.</p> <p>Ans.</p> <table><tr><th colspan="2">Differences between Evaporation and Boiling</th></tr><tr><th>Evaporation</th><th>Boiling</th></tr><tr><td>Evaporation is a normal process that occurs when the liquid form changes into the gaseous form; while causing an increase in the pressure or temperature.</td><td>Boiling is an unnatural process where the liquid gets heated up and vaporized due to continuous heating of the liquid.</td></tr><tr><td>Evaporation usually occurs on the heated liquid's surface.</td><td>Boiling usually occurs on the entire mass of the liquid that gets heated up.</td></tr><tr><td>Bubbling effect is not visible in evaporation.</td><td>Bubbling effect is visible during the process of boiling.</td></tr><tr><td>The process of evaporation is slow.</td><td>The process of boiling is much quicker.</td></tr></table>	Differences between Evaporation and Boiling		Evaporation	Boiling	Evaporation is a normal process that occurs when the liquid form changes into the gaseous form; while causing an increase in the pressure or temperature.	Boiling is an unnatural process where the liquid gets heated up and vaporized due to continuous heating of the liquid.	Evaporation usually occurs on the heated liquid's surface.	Boiling usually occurs on the entire mass of the liquid that gets heated up.	Bubbling effect is not visible in evaporation.	Bubbling effect is visible during the process of boiling.	The process of evaporation is slow.	The process of boiling is much quicker.	2+1+2 =5
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		<p>(ii) How does the rate of evaporation change with the increased Humidity and increased Surface area?</p> <p>Ans. Humidity- Decreases Surface area- Increases</p> <p>(iii) What is the physical state of water at:</p> <p>(a) 0°C - Solid and liquid (b) 100°C -Liquid and gas</p> <p style="text-align: center;">OR</p> <p>(i) What type of clothes should we wear in the summer season and why?</p> <p>Ans:In summer, it is preferred to wear light-coloured cotton clothes because light colour reflects heat and cotton materials have pores that absorb sweat, facilitating evaporation, and hence causing a cooling effect on the skin.</p> <p>(ii) Give reasons for the following:</p> <p>(a) A desert cooler cools better on a hot dry day. (b) Liquids generally have lower density as compared to solids. But ice floats on water. (c) We see water droplets on the outer surface of a glass containing ice-cold water.</p> <p>Ans. (a) On a hot dry day, the temperature is high and humidity is low. The water takes heat from the hot desert cooler and evaporates. The evaporation of water cools the pads and the circulating water. A desert cooler cools better on a hot dry day.</p> <p>(b) This is due to the open cage-like structure of ice. It means, in ice, some vacant spaces are left when H₂O molecules get linked in ice. In water, these vacant spaces are less, therefore due to the larger vacant space, the volume of ice increases hence, density decreases. Thus it floats over the surface of the water.</p> <p>(c) The water vapour present in air, on coming in contact with the cold glass of water, loses energy and gets converted to liquid state(condensation), which we see as water droplets.</p>	2+3=5
35	35	<p>Draw a neat diagram of a plant cell. Identify and label the cell organelle that is:</p> <p>a) full of cell sap - VACUOLE b) involved in membrane biogenesis – ENDOPLASMIC RETICULUM c) referred to as the kitchen of the cell – CHLOROPLAST</p>	2+3

		 <p style="text-align: center;">OR</p> <p>a) What is cell division? b) Name the two types of cell division. c) State three differences between the two types of cell division.</p> <p>a) The process by which new cells are made is called cell division. b) There are two main types of cell division: mitosis and meiosis c) Mitosis- In this process, each cell divides to form two identical daughter cells. The daughter cells have the same number of chromosomes as the mother cell. It helps in growth and repair of tissues in organisms. Meiosis- When a cell divides by meiosis it produces four new cells instead of just two. The new cells only have half the number of chromosomes than that of the mother cells. It helps in gamete formation. (or any other)</p>	1+1+3
36	36	<p>(a) State universal law of gravitation. (b) Suppose gravity on the earth suddenly becomes zero, then in which direction will the moon begin to move if no other celestial body affects it? (c) The mass of Earth is 6×10^{24} kg and that of the moon is 7.4×10^{22} kg. If the distance between the Earth and the Moon is 3.84×10^5 km, calculate the force exerted by Earth on the Moon. Given $G = 6.7 \times 10^{-11} \text{ Nm}^2/\text{kg}^2$.</p> <p style="text-align: center;">OR</p> <p>(a) What do you mean by free fall ? (b) Why will a sheet of paper fall slower than one that is crumpled into a ball ? (c) A stone is released from the top of a tower of height 19.6 m. Calculate its final velocity just before touching the ground (Take $g = 9.8 \text{ m/s}^2$)</p> <p>ANS: (a) The universal law of gravitation states that any two bodies in the universe attract each other with a force that is directly proportional to the product of their masses and inversely proportional to the square of the distance between them.</p> <p>(b) Tangential to the path.</p> <p>(c) Mass of the Earth = 6×10^{24} kg Mass of Moon = 7.4×10^{22} kg</p>	5
36	36		

		<p>Distance between them= 3.84×10^5 km</p> <p>$G = 6.67 \times 10^{-11} \text{ Nm}^2/\text{kg}^2$</p> <p>$F = Gm_1 m_2 / d^2 = 6.67 \times 10^{-11} \times 6 \times 10^{24} \times 7.4 \times 10^{22} / 3.84 \times 3.84 \times 10^{16}$</p> <p>$F = 2.08 \times 10^{20} \text{ N}$</p> <p style="text-align: center;">OR</p> <p>(a) Free fall - Motion of a body only under the influence of gravitational force.</p> <p>(b) Although “g” is the same for both but sheet of paper will fall slower due to air resistance.</p> <p>(c) For the stone, $u=0$</p> <p>$h=19.6\text{m}$; $g= 9.8 \text{ m/s}^2$</p> <p>using equation of motion for uniformly accelerated motion,</p> <p>$2gh = v^2 - u^2$</p> <p>$v^2 = 2 \times 9.8 \times 19.6$</p> <p>$v = 19.6 \text{ m/s}$</p>	
<p>SECTION E</p> <p>Q No 37 to 39 are case based/ data based questions with 2 to 3 short sub parts. Internal choice is provided in one of these sub parts</p>			
37	37	<p>Various types of changes are happening around us every day. The interconversion of states is a physical change because no change in the chemical nature of the substance takes place.</p> <p>Both water and cooking oil are liquid but their chemical characteristics are different. They differ in odour and inflammability. We know that oil burns in air whereas water extinguishes fire. It is this chemical property of oil that makes it different from water.</p> <p>(a) Classify the following as physical or chemical changes: rusting of almirah, mixing of iron filings and sulphur powder</p> <p>(b) How are physical and chemical changes different from each other?</p> <p>(c) Iron filings and sulphur were mixed together and divided into two parts ‘A’ and ‘S’. Part ‘A’ was heated strongly while Part ‘S’ was not heated. Dilute hydrochloric acid was added to both the parts and evolution of gas was seen in both the cases.</p> <p>(i) Identify the gases released in both parts .</p> <p>(ii) How will you identify the two gases released?</p>	(1+1+2)

		<p>Ans. (a) Physical- mixing of iron filings and sulphur powder Chemical- rusting of almirah</p> <p>(b) Physical changes occur without a change in composition and no change in the chemical nature of the substance. They display different physical properties but are chemically the same. During a chemical process one substance reacts with another to undergo a change in chemical composition. Chemical change brings change in the chemical properties of matter and we get new substances.</p> <p>(c) Part A- Hydrogen sulphide(smell of rotten eggs) Part S- Hydrogen gas(pop sound test)</p> <p style="text-align: center;">OR</p> <p>Two chemical species X and Y combine to form a product P which contains both X and Y.</p> $X + Y \longrightarrow P$ <p>X and Y cannot be broken down into simpler substances by simple chemical reactions. From the given information, classify P as an element or a compound. Will the properties of P differ from that of X and Y or not? Give a reason.</p> <p>Ans. P is a compound. It has different properties as compared to X and Y because after a chemical change products have new properties due to rearrangement of bonds. This makes the products new substances that are chemically different from the reactants.</p>	0.5+0.5+1=2
38	38	<p>Observe the diagram given below carefully and answer the questions that follow-</p>  <p>(a) Identify X in the given diagram. STOMA/ STOMATA (b) Name the kidney-shaped cells (marked Y) that surround X. GUARD CELLS (c) State two functions of X. They are necessary for exchanging gases with the atmosphere. Transpiration (loss of water in the form of water vapour) also takes place through stomata</p> <p style="text-align: center;">OR</p>	1+1+2

		(c) Write two characteristic features of epidermis, the outermost layer of cells that contain X. The epidermis is usually made of a single layer of cells that are living without any intercellular spaces. (or any other)	
39	39	<p>The first law of motion was based on the experimental observations of Galileo who observed that a smooth marble ball would move with constant speed on a frictionless surface along straight lines unless an external unbalanced force acts on it. No net force is needed to sustain the uniform motion of a marble. In practical situations it is difficult to achieve zero unbalanced force.</p>  <p>Based on the above observation, answer the following questions:</p> <p>(a) What will happen to the marble ball rolling on the right side plane (which is ultimately made horizontal), if the net unbalanced forces on it are not zero?</p> <p>(b) Why is the first law of motion also known as the law of inertia?</p> <p>(c) Which of the following has more inertia?-a five rupee coin or a one rupee coin? Give reason,why?</p> <p style="text-align: center;">OR</p> <p>(c) An object experiences a zero force. Is it possible for the object to be travelling with a non-zero velocity? If yes, state the conditions that must be placed on the magnitude and direction of the velocity.</p> <p>ANS: (a) Due to friction the marble ball will stop after travelling some distance.</p> <p>(b) All objects resist a change in their state of motion.unless external unbalanced force acts on the object. In a qualitative way, the tendency of undisturbed objects to stay at rest or to keep moving with the same velocity is called inertia. This is why the first law of motion is also known as the law of inertia.</p> <p>(c) a five rupee coin -more mass - mass is a measure of inertia.</p> <p style="text-align: center;">OR</p> <p>(c) Yes. an object moving with constant velocity(same magnitude) in the same direction when zero force acts on it.</p>	(1+1+2)

