

INDIAN SCHOOL MUSCAT

MID TERM EXAMINATION

SEPTEMBER 2018

CLASS IX

SET-C

Marking Scheme – SCIENCE [THEORY]

Q.NO	Answers	Marks								
1.	diameter or 2r	1								
2.	Amount of heat required to change one gram of a solid into liquid at its melting point under atmospheric pressure is called latent heat of fusion.									
3.	(i) yes, ii) object completing one circle ii)ball thrown upward and caught by the person at the same point	1, ½, ½								
4.	(i)based on newton’s third law of motion . (ii)As the water comes out of the nozzle of the sprinkler ,an equal and opposite reaction force come in to play	1,1								
5.	Intermixing of particles of two or more substances on their own is called diffusion. The particles in gases move very rapidly.									
6.	Temperature at which a liquid changes into vapour under atmospheric pressure is called boiling point. <table><tr><td><u>Evaporation</u></td><td><u>Boiling</u></td></tr><tr><td>Slow process</td><td>Fast process</td></tr><tr><td>Surface phenomenon</td><td>Bulk phenomenon</td></tr><tr><td>Occurs at all temperatures below the b.p.</td><td>Occurs only at the b.p</td></tr></table>	<u>Evaporation</u>	<u>Boiling</u>	Slow process	Fast process	Surface phenomenon	Bulk phenomenon	Occurs at all temperatures below the b.p.	Occurs only at the b.p	
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7.	a)Particles are held together in fixed positions by strong forces of attraction. b)Forces of attraction is sufficient to hold them together but not sufficient to keep them in fixed position.									
8.	a) Protein and lipids (1/2) +(1/2) b) Plasma membrane permits entry and exit of some materials (1)									
9.	Apical meristem –shoot and root tip (1/2) Increase in length of root and shoot (1/2) Lateral meristem-in the lateral sides of the stem and roots(1/2) Increase in the thickness (1/2)									
10	a) Blood (1/2) b) Tendon (1/2) c) Phloem(1/2) d) Sclerenchyma (1/2)									
11	a) Egg swells that kept in water(1/2) Water enters the egg by osmosis as the concentration of water molecules more outside (1/2) b) Egg shrinks when kept in salt solution (1/2) Water is lost from the egg by osmosis as the concentration of salt is more outside (1/2)									

12	$t_1 = x/40$, $t_2 = x/50$, total time = $9x/200$, A.S = 44.4 km/hr OR $t_1 = 1/2$ hr, $t_2 = 3/4$ hr, total time = $5/4$, A.S = 48 km/hr	$\frac{1}{2}, 1/2,$ 1,1 $\frac{1}{2}, 1/2,$ 1,1
13	formula $m_1u_1 + m_2u_2 = m_1v_1 + m_2v_2$ $0 = 4v_1 + 0.05 \times 80$ $V_1 = -1$ m/s	1,1,1
14	(i) newton second law (ii) derivation	1,2
15	a) Lower part of his body starts moving with the bus but upper part tries to remain at rest due to inertia of rest b) An athlete runs before jumping to gain momentum .because it helps in jumping higher and longer because of inertia of motion gained due to motion c) Large momentum of his hand is reduced to zero in a short interval of time which exerts a very large force.	1,1,1
16	a) A solution that cannot dissolve any more amount of solute is a saturated solution. When it is heated , it becomes unsaturated. b) i) We get pure substances by the process of crystallization. Crystals do not undergo any chemical decomposition. OR a) The amount of solute present in a given amount of solution is called concentration. b) % mass concentration = $\frac{\text{mass of solute} \times 100}{\text{mass of solution}}$. Let the mass of sugar needed be x gram. $25 = \frac{x}{100} \times 250$ $2x = 125$ $x = 62.5$ g Mass of sugar needed = 62.5g	
17	a) By compressing & cooling it at the same time. b) When dry ice is exposed to air it changes directly into gas without forming any liquid/Solid CO ₂ undergoes sublimation when exposed to air. c) When humidity increases , rate of evaporation decreases.	
18	a) Process of separating suspended particles from a colloidal solution by rotating it at high speed is called centrifugation. b) Applied in dairies to separate cream from milk. Applied in washing machine to squeeze out water from wet clothes.	
19	a) Plastid and mitochondria (1/2)+(1/2) b) Storage ,modification and packing of materials in vesicles Complex sugars made from simple sugars Formation of lysosomes (any two points 2 marks) OR a) Chromoplasts and leucoplast (1/2)+(1/2) b) Channels for the transport between nucleus and cytoplasm Or any two functions of SER or RER (1+1)	
20	a) Epithelial tissue (1) b) Xylem transport water and minerals ,root to leaves upward direction ,dead tissue or any two points (1/2) + (1/2) Phloem transport food , all directions ,living tissues or any two (1/2) +(1/2)	
21	a) Endocytosis(1)	

	b) Energy is produced for various biochemical reactions (1) Energy is produced in the form of ATP or any (1)	
22	(a) $a = 8.3 \text{ m/s}^2$, (b) $a = -8.3 \text{ m/s}^2$, (c) 37.5 m (d) uniform and non uniform motion Or a) $t = v - u/a$, $t = 10 \text{ s}$ b) $S = ut + 1/2 at^2$, $S = 4 \text{ m}$ c) Object moving in the straight line	1,1,1,2 1,1 1,1 1
23	(I) $F = G m_1 m_2 / r^2$ Substitution $F = 2.01 \times 10^{20} \text{ N}$ (II) IMPORTANCE OF UNIVERSAL LAW OF GRAVITATION ANY TWO POINTS	1,1,1 1,1
24	a) A homogeneous mixture of solute and solvent is called a true solution. b) The process of scattering of light by colloidal particles is called Tyndall effect. <u>Homogeneous mixture</u> <u>Heterogeneous mixture</u> Soda water Milk Sugar solution Muddy water Alloy Butter OR a) Description of process of sublimation & labeled diagram b) When a mixture of two immiscible liquids is poured into a separating funnel, it forms separate layers depending on their densities.	
25	a) A substance consisting of only one type of particles is called a pure substance. b) i) Alcohol, Acetone ii) Milk, Coloured stones c) i) Can be separated by filtration. ii) Particles can be seen with naked eyes	
26	a) Brain and spinal cord (1/2) + (1/2) b) Neurons (1) c) Drawing and 3 labeling (1+1+1) OR a) Drawing of a prokaryotic cell with two labeling (2) b) Differences three points (1+1+1) page no. 63	
27	a) Any two difference between cardiac muscles and striated muscles (1+1) b) Three points related to areolar tissue based on location – between skin and muscles, around blood vessels and nerves, in the bone marrow (1/2 + 1/2 + 1/2) Functions – fill the space inside organs, support internal organs, repair of tissues (1/2 + 1/2 + 1/2)	