

# INDIAN SCHOOL MUSCAT

## MID TERM EXAMINATION

SEPTEMBER 2018

### CLASS IX

### SET-B

#### Marking Scheme – SCIENCE [THEORY]

Q.NO.	Answers	Marks
1.	By running , the athlete acquires inertia of motion. This helps him to take a longer jump .	1
2.	Camphor has weak intermolecular forces of attraction and it changes directly from solid to vapors and disappears due to sublimation.	
3.	One difference between balanced and unbalanced forces.	2
4.	<p>(b) <math>F = \frac{GM_1 M_2}{R^2}</math></p> <p><math>F' = \frac{GM'_1 M'_2}{R_2^2} = 16 F</math></p> <p>(b) <math>N m^2 kg^{-2}</math></p>	<p>½</p> <p>½</p> <p>1</p>
5.	<p>a) Size of the particles of colloids is intermediate between solutions and suspension/Colloids are quite stable Hence, the particles do not settle down on leaving undisturbed.</p> <p>b) Increase in temperature increases the solubility of the salt.</p>	
6.	<p>a) The latent heat of vaporisation of a liquid is the quantity of heat in joules required to convert 1 kilogram of the liquid (at its boiling point ) to vapour or gas, without any change in temperature.</p> <p>b) The temperature at which matter changes its state from solid to liquid at atmospheric pressure is called melting point.</p>	
7.	Using separating funnel with explanation.	
8.	<p>a) Composition of plasma membrane is lipids and proteins, composition of cell wall is cellulose.</p> <p>b) Endocytosis</p>	
9.	<p>1. a. Cork</p> <p>b. Sclerenchyma</p> <p>2. Because of the presence of collenchyma tissues.</p>	
10.	Chromatin network is a entangled mass inside nucleus. The chromatin threads condense and turn into rod like structure called chromosomes during cell division	
11.	<p>1. Tissues provide structural strength, show division of labour.</p> <p>2. They are cylindrical, branched / uninucleated</p>	
12.	Definition of uniform circular motion.	1

	<p>Since the direction of velocity changes continuously, it is an accelerated motion .</p> <p>Acceleration is directed towards the centre .</p> <p>Example of uniform circular motion</p> <p style="text-align: center;">OR</p> <p>Definition of uniform and non – uniform acceleration.</p> <p>Distance –time graph for uniform motion</p>	<p>1</p> <p>½</p> <p>½</p> <p>1 + 1</p> <p>1</p>									
13.	<p>(a)OA – Uniform acceleration AB - Constant velocity</p> <p>(b)Velocity after 10 s - 20 m/s Velocity after 40 s - zero</p> <p>(c)Distance travelled = Area of rectangle = 20 x 20 =400 m</p>	<p>½</p> <p>½</p> <p>½</p> <p>½</p> <p>½</p>									
14.	<p>(a)Due to inertia of rest</p> <p>(b)By lowering his hands , the player increases the time for the same change in momentum . Hence the impact of force can be reduced .</p> <p>(c)The water ejected out with large force exerts an equal reaction force in the backward direction according to Newton's Third Law.</p>	<p>1</p> <p>1</p> <p>1</p>									
15.	<p>(a)Universal Law of Gravitation statement</p> <p>(b) Issac Newton</p> <p>(b) Any one significance of Universal law of Gravitation</p>	<p>1</p> <p>1</p> <p>1</p>									
16.	<table border="1"> <tr> <td>Transparency</td><td>True solution is transparent</td><td>Suspension is opaque</td></tr> <tr> <td>Stability</td><td>Most stable</td><td>Unstable</td></tr> <tr> <td>Filtration</td><td>Cannot be filtered</td><td>Can be filtered</td></tr> </table> <p>OR</p> <p>A) The solution in which no more of solute can be dissolved in a given amount of solvent at a specific temperature, is called saturated solution. Crystallization takes place when it is allowed to cool.</p> <p>B) In the air, Oxygen and other gases are solute and Nitrogen is solvent.</p>	Transparency	True solution is transparent	Suspension is opaque	Stability	Most stable	Unstable	Filtration	Cannot be filtered	Can be filtered	
Transparency	True solution is transparent	Suspension is opaque									
Stability	Most stable	Unstable									
Filtration	Cannot be filtered	Can be filtered									
17.	<p>(A) Anything that has mass and occupies space is called matter. Solids &lt; Liquids &lt; Gases ( Rate of diffusion) Gases &lt; Liquids &lt; Solids ( Force of attraction)</p>										

	(B) (i) Both, Liquid and Gas . (ii) Liquid	
18.	A) Temperature and pressure B) Refer textbook .	
19.	1. a. Muscular tissue and Nervous tissue . b. Nervous tissues. c. The family members showed the value of being caring, responsible, dutiful and kind.  OR 1.a. Chloroplast b. Rough Endoplasmic reticulum 2. Plasma membrane allows the or permits the entry and exit of some materials in and out of the cell. It also prevents movement of some other material	
20.	1. Spontaneous movement of a substance from a region of high concentration to a region where its concentration is low. 2. Golgi apparatus performs the function of storage, modifications and packaging of products. If Golgi apparatus is not there, the materials synthesized by the cell will not be packaged and transported.	
21.	1. Cell loses water and shrinks 2. Cell gains water and swells up 3. There is no overall movement of water and the cell remains the same.	
22.	(i) Velocity – time graph  Introduction  Derivation of $S = ut + \frac{1}{2}at^2$  (ii) $u = v - at = 12 \text{ m/s}$  $S = \frac{v^2 - u^2}{2a} = 12 \text{ m}$  OR  (i) Velocity – time graph  Introduction  Derivation of $v^2 - u^2 = 2aS$  (ii) $v = u + at$  $= 15 \text{ m/s}$  $S = ut + \frac{1}{2}at^2$  $= 125 \text{ m}$	1  $\frac{1}{2}$  $1\frac{1}{2}$  1  1   OR  1  $\frac{1}{2}$  $1\frac{1}{2}$   1   1
23.	Law of conservation of linear momentum	1

	Introduction and Proof	3								
	Mass of gun is much more than the bullet . Hence recoil velocity of gun is much lesser .	1								
24.	(A) Any two properties of gases. (B) Any two. <table><tr><td>Evaporation</td><td>Boiling</td></tr><tr><td>i) Takes place at all temperatures below its boiling point.</td><td>i) Takes place at boiling point.</td></tr><tr><td>ii) Causes cooling.</td><td>ii) Does not cause cooling.</td></tr><tr><td>iii) Surface phenomenon.</td><td>iii) Bulk phenomenon.</td></tr></table> (C) By increasing Pressure and reducing temperature. OR A) When we put some acetone on our hand , after sometime we will feel coolness on our hand because acetone absorbs kinetic energy from our hand & evaporates and evaporation causes cooling. B) Particles of the matter are continuously moving. C) Increase in temperature increases the rate of evaporation. Increase in humidity decreases the rate of evaporation.	Evaporation	Boiling	i) Takes place at all temperatures below its boiling point.	i) Takes place at boiling point.	ii) Causes cooling.	ii) Does not cause cooling.	iii) Surface phenomenon.	iii) Bulk phenomenon.	
Evaporation	Boiling									
i) Takes place at all temperatures below its boiling point.	i) Takes place at boiling point.									
ii) Causes cooling.	ii) Does not cause cooling.									
iii) Surface phenomenon.	iii) Bulk phenomenon.									
25.	(A) Mass of solution = 2.5 + 47.5 = 50.0g Mass by mass percentage of solution = Mass of solute/ Mass of solution x 100 = 2.5/50 x 100 = 5%  B) Any two differences C) Centrifugation. Difference in the densities of the constituents.									
26.	1 a. On the outer layer of the tree trunk/bark all thick layer of dead cells is present which acts as protective tissue. b. In cork, all cells are dead without intercellular spaces, the walls of the cells have deposition of suberin. c. The students in a group show team effort, peer learning and co-operatiye.  2. The epidermal (layer) tissue forms a protective outer covering for the plants and it protects the internal parts of the plant.. For this protective role to play the continuation of cells is necessary, hence it does not have intercellular space. 3.Exchange of gas, Transpiration  OR 1. a. Adipose tissue b. Ligament c. Epithelial tissue d. Tendon 2. Stratified squamous epithelium is present in the skin. The layers of cells are arranged to prevent wear and tear. 3 .Neuron- Diagram, Text book page no:78, Fig:6.12									
27.	1.Prokaryotic cell a. Generally small b. Single chromosome c. Membrane- bound cell organelles are absent Eukaryotic cell a. Generally large b. More than one chromosome									

	<p>c. Membrane- bound cell organelles are present</p> <p>2. Prokaryotic cell diagram</p> <p>Text book page no: 62, Fig. 5.4</p>	
--	---	--