

FINAL EXAMINATION

FEBRUARY 2019

CLASS IX

Marking Scheme – SCIENCE [PHYSICS][THEORY]

	VALUE POINTS	Split up marks
<b>SECTION A</b>		
1.	BIO	1
2.	BIO	1
<b>SECTION B</b>		
3.	CHE	2
4.	(a)(i) Distance travelled by the object (ii) Graph is a straight line  OR  (b)(i) The odometer of an automobile measures the distance travelled by the automobile (ii) Graph is a curve .	1 1  1 1
5.	BIO	2
<b>SECTION C</b>		
6.	(i) If the masses of both the objects are doubled (made 2 times each), the force between them will become $2 \times 2 = 4$ times. (ii) A block of plastic released under water comes up to the surface of water because the buoyant force (or upthrust) acting on the block of plastic due to water is greater than its weight. The buoyant force is greater because the density of water is greater than the density of plastic. (iii) Pressure is inversely proportional to the area of contact. Hence sharp tip of the needle helps in easy penetration.	1 1 1
7.	(i) Any one situation with reason (ii) SI unit – Joule (J) and commercial unit – kilowatt hour (iii) Electricity consumed for 30 days = $5 \times 0.025 \times 6 \times 30 = 22.5$ units	1 1 1
8.	(a)(i) The sound waves are called mechanical waves because they need a material medium for their propagation. (ii)(a) The loudness of sound is determined by the amplitude of sound waves. (b) The pitch of sound is determined by the frequency of vibration of the sound producing source. (iii) Bats emit high-frequency ultrasound squeaks (or ultrasonic squeaks) while flying and listen	1 ½ + ½ 1

	to the echoes produced by the reflection of their squeaks from the prey like a flying insect. From the time taken by the echo to be heard, bats can judge the distance of the insect and hence catch it	1
	OR	1
	(b)(i) It is due to the very high speed of light that the flash of lightning is seen first and it is due to comparatively low speed of sound that the thunder is heard a few seconds later (though they are produced at the same time).	1
	(ii) The persistence of sound in a big hall due to repeated reflections from the walls, ceiling and floor of the hall is called reverberation. If the reverberation is too long, then the sound becomes blurred, distorted and confusing due to overlapping of different sounds.	1
	Methods used for reducing excessive reverberations in big halls and auditoriums are	
	(i) Panels made of sound-absorbing materials are put on the walls and ceiling of big halls and auditoriums to reduce reverberations.	
	(ii) Carpets are put on the floor to absorb sound and reduce reverberations.	
	(Any two methods )	
9.	Graph and introduction Derivation of $v = u + at$ .	1 ½ 1 ½
10.	CHE	3
11.	CHE	3
12.	BIO	3
13.	BIO OR BIO	3
14.	BIO	3
<b>SECTION D</b>		
16.	(a)(i) Definition of kinetic energy Expression for kinetic energy derivation (ii) No, because Kinetic energy is a scalar quantity . (iii) Work done = $\frac{1}{2} m v^2$ .	1 2 1 1
	OR	
	(b)(i) Definition of work SI unit of work is joule $W = F S$ Example for positive work	1 1 1 1
	(ii) $P E = mgh$ $PE \propto h$ Greater the height of the body , more is the PE	1

17.	i) Statement of Newton's Second law of motion . (ii) More damage happens due to large change in momentum (iii) Definition of impulse (iv) $F = m (v - u) / t$ $m = \frac{2 \times 10}{3} = 6.66 \text{ kg}$ (v) Lighter body	1 1 1 1 1
15.	CHE OR CHE	5
16.	CHE	5
17.	BIO	5
18.	BIO OR BIO	5
<b>SECTION E</b>		
19.	(a) Range 0- 100 g-wt , least count 1 g-wt (option (d) ) OR (b) Relative density is defined as the ratio of a substance to the density of water . Density of silver = $10.8 \times 1000 = 10800 \text{ kg m}^{-3}$	2 1 1
20.	(i) Longitudinal wave (ii) Transverse wave	1 1
21.	CHE OR CHE	2
22.	CHE	2
23.	BIO	2
24.	BIO OR BIO	2
	<b>End of the Question Paper</b>	

# INDIAN SCHOOL MUSCAT

**SET A**

## FINAL EXAMINATION

**FEBRUARY 2019**

### CLASS IX

Marking Scheme – *Chemistry* **SUBJECT[TITLE][THEORY]**

	VALVUE POINTS		Split up marks
SECTION A			
1.	BIO		1
2.	BIO		1
SECTION B			
3.	Removal and thinning of the fertile top soil from the region due to climatic and physical processes. Steps: growing deep rooted plants at slope Preventing deforestation Preventing large scale grazing of animals (any two)		1 ½ ½
4.	PHY OR PHY		2
5.	BIO		2
SECTION C			
6.	PHY		3
7.	PHY		3
8.	PHY OR PHY		3
9.	PHY		3
10.	solids	Gases	3
	(i)intermolecular space is small, so the distance is less.	Intermolecular space is maximum, so the distance is more.	
	(ii)slowest	fastest	
	(iii)solids are rigid and incompressible	Gases are non-rigid and are compressible	

24.	$3.5g + 13.7g = X + 13.8g$ $X = 3.4g$ OR A mixture which has uniform composition. e.g. Sugar solution. A mixture which has non-uniform composition. eg sand and chalk mixed together	1 1 Or 1 1
25.	A process in which a solid directly gets converted into vapour phase below its MP. Ammonium chloride.	1 1
26.	BIO	2
27.	BIO OR BIO	2
	<b>End of the Question Paper</b>	

**INDIAN SCHOOL MUSCAT**  
**FINAL TERM EXAMINATION**

**SET A**

**FEBRUARY 2019**

**CLASS IX**

**Marking Scheme – BIOLOGY[THEORY]**

	VALVUE POINTS	Split up marks
<b>SECTION A</b>		
1.	Biotic factors- insects, rodents Abiotic factors- inappropriate moisture and temperature. (any two factors)	$\frac{1}{2} + \frac{1}{2} = 1\text{mark}$
2.	Nitrogen is the part of many essential molecules like proteins, nucleic acids and vitamins in living organisms.	1mark
<b>SECTION B</b>		
3.	CHE	2
4.	PHY OR PHY	2
5.	Similarities- Bilaterally symmetrical and triploblastic. ( $\frac{1}{2} + \frac{1}{2} = 1\text{mark}$ ) Dissimilarity- Body cylindrical in Nematoda, Segmented in Annelida or any other dissimilarity ( $\frac{1}{2} + \frac{1}{2} = 1\text{mark}$ )	2
<b>SECTION C</b>		
6.	PHY	3
7.	PHY	3
8.	PHY OR PHY	3
9.	PHY	3
10.	CHE	3
11.	CHE OR CHE	3
12.	CHE	3
13.		3

	( $\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} = 3$ marks) Head ache, vomiting, fits, unconsciousness (any two symptoms) ( $\frac{1}{2} + \frac{1}{2} = 1$ mark)	
<b>SECTION E</b>		
22.	PHY OR PHY	2
23.	PHY	2
24.	CHE OR CHE	2
25.	CHE	2
26.	Monocot plant- leaves with parallel venation, trimerous flowers. ( $\frac{1}{2} + \frac{1}{2} = 1$ mark) Dicot plant- leaves with reticulate venation, pentamerous c flowers. ( $\frac{1}{2} + \frac{1}{2} = 1$ mark)	2
27.	Voluntary muscles- long, cylindrical and unbranched. ( $\frac{1}{2} + \frac{1}{2} = 1$ mark) Involuntary muscles- spindle shaped, uninucleate. ( $\frac{1}{2} + \frac{1}{2} = 1$ mark)  OR  Any two distinguishing features of each. ( $\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} = 2$ marks)	2
	<b>End of the Question Paper</b>	

FINAL EXAMINATION

FEBRUARY 2019

CLASS IX

Marking Scheme – SCIENCE[PHYSICS][THEORY]

	VALUE POINTS	Split up marks
<b>SECTION A</b>		
1.	BIO	1
2.	BIO	1
<b>SECTION B</b>		
3.	CHE	2
4.	<p>(a)(i) The magnitude of average velocity of an object is equal to its average speed only when the object moves along a straight line path in uniform motion.</p> <p>(ii) The slope of a speed- time graph indicates acceleration.</p> <p style="text-align: center;">OR</p> <p>(b)(i) A body has a uniform acceleration if its velocity changes by equal amounts in equal intervals of time.</p> <p>(ii) The graph signifies that the body is moving with a constant velocity .</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p>
5.	BIO	2
<b>SECTION C</b>		
6.	<p>(i) If the separation between the objects is doubled, the force between them will become <math>\frac{1}{4}</math></p> <p>(ii) A sheet of paper has a larger area. Due to its large area, when a sheet of paper is dropped from a height, it experiences more resistance from air, its speed decreases and it falls at a slower rate.</p> <p>(iii) Density of sea water is greater than density of river water. Hence the immersed portion of the body of a swimmer experiences greater buoyancy in sea water than in river water .</p>	<p>1</p> <p>1</p> <p>1</p>
7.	<p>(i) Definition of negative work with one example .</p> <p>(ii) <math>1 \text{ KWh} = 3.6 \times 10^6 \text{ J}</math></p> <p>(iii) <math>P = W / t = 1000/10 = 100 \text{ W}</math></p>	<p>1</p> <p>1</p> <p>1</p>
8.	<p>(a)(i) The minimum distance in which a sound wave repeats itself is called its wavelength. The maximum displacement of the particles of the medium from their original undisturbed positions, when a sound wave passes through the medium, is called amplitude of the sound wave.</p> <p>(ii) Any one difference</p> <p>(iii) sound travels fastest in iron.</p>	<p>1</p> <p>1</p> <p>1</p>



	OR	1
	(i) a) The incident sound wave, the reflected sound wave, and the normal at the point of incidence, all lie in the same plane.	
	b) The angle of reflection of sound is always equal to the angle of incidence of sound.	2
	(ii) Ultrasound waves are made to pass through one face of the metal block (to be tested) , and ultrasound detectors are placed on the opposite face of the metal block to detect the transmitted ultrasound waves. ultrasound waves are not able to pass through a part of the metal block and get reflected back, then there is a flaw or defect in the metal block (like a crack or hole).	
9.	Graph and introduction Derivation of $S = ut + \frac{1}{2} a t^2$ .	1 ½ 1 ½
10.	CHE	3
11.	CHE OR CHE	3
12.	CHE	3
13.	BIO	3
14.	BIO OR BIO	3
15.	BIO	3

#### SECTION D

16.	(a)(i)Definition of potential energy . Expression for PE $PE \propto h$ (ii) Explanation for the conservation of energy in a simple pendulum.	1 1 1 2
	OR	
	(b)(i) Statement of the law of conservation of energy Prove of the conservation of energy in the case of a freely falling object .	1 3
	(ii) $P = F \times v$	1
17.	(i)Statement of Newton's Third law of motion.	1
	(ii)Due to inertia of direction mud flies off tangentially .	1
	(iii) Definition of impulse	1
	(iv)Recoil velocity = - $\frac{0.01 \times 150}{4}$ = - 0.37 m/s	1
	(v) One difference between balanced and unbalanced force .	1
18.	CHE OR CHE	5

19.	CHE	5
20.	BIO	5
21.	BIO OR BIO	5

SECTION E

22.	(a)It means that 1 m <sup>3</sup> volume of aluminium has a mass of 2700 kg.  Density = $\frac{2700 \times 1000}{100 \times 100 \times 100} = 2.7 \text{ g cm}^{-3}$  <div>OR</div> Density = $\frac{\text{mass}}{\text{volume}} = \frac{120}{24} = 5 \text{ g mL}^{-1}$	1   1   2
23.	40 + i = 90 i= 90 – 40 = 50 <sup>0</sup>	1 1
24.	CHE OR CHE	2
25.	CHE	2
26.	BIO	2
27.	BIO OR BIO	2
	End of the Question Paper	

INDIAN SCHOOL MUSCAT

SET B

FINAL EXAMINATION

FEBRUARY 2019

CLASS IX

Marking Scheme – <sup>chemistry</sup>SUBJECT[TITLE][THEORY]

	VALUE POINTS	Split up marks
SECTION A		
1.	BIO	1
2.	BIO	1
SECTION B		
3.	(i) Burning of fossil fuels like coal and petroleum releases oxides of nitrogen and sulphur. Inhalation of these gases is dangerous. (ii) The combustion of fossil fuels also increases the amount of suspended particles in air. The presence of high levels of these pollutants reduces visibility in cold weather where water also condenses out of air forming smog. Smog is an indication of air pollution.	2
4.	PHY OR PHY	2
5.	BIO	2
SECTION C		
6.	PHY	3
7.	PHY	3
8.	PHY OR PHY	3
9.	PHY	3
10.	(a)(i) liquid (ii) solid (iii) gas (b) List any three	1/2x3 1/2x3
11.	(a) (i) $\text{MgO} = 24 + 16 = 40\text{u}$ (ii) $\text{CO}_2 = 12 + 2 \times 16 = 44\text{u}$ (b)(i) Ag (ii) Mn OR	1 1 1

	it	
25.	(a)explanation (b)(i)hetero (ii)homo	1
26.	BIO	2
27.	BIO OR BIO	2
	<b>End of the Question Paper</b>	

**INDIAN SCHOOL MUSCAT**  
**FINAL TERM EXAMINATION**

**SET B**

**FEBRUARY 2019**

**CLASS IX**

**Marking Scheme – BIOLOGY[THEORY]**

	VALVUE POINTS	Split up marks
<b>SECTION A</b>		
1.	When living plant cell loses water through osmosis there is shrinkage of the contents of the cells away from the cell wall. This is plasmolysis	1mark
2.	Nitrogen is the part of many essential molecules like proteins, nucleic acids and vitamins in living organisms.	1mark
<b>SECTION B</b>		
3.	CHE	2
4.	PHY OR PHY	2
5.	Dead cells, long, narrow, walls thickened with lignin, no internal space (any four) ( $\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} = 2$ marks)	2
<b>SECTION C</b>		
6.	PHY	3
7.	PHY	3
8.	PHY OR PHY	3
9.	PHY	3
10.	CHE	3
11.	CHE OR CHE	3
12.	CHE	3
13.	1) Whether they are having well differentiated components 2) Whether they have transporting tissues 3) Ability to bear seeds and whether the seeds are enclosed in fruits (1+1+1=3marks)	3

	CHE OR CHE	2
25.	CHE	2
26.	Voluntary muscles- long, cylindrical and unbranched. ( $\frac{1}{2} + \frac{1}{2} = 1$ mark) Involuntary muscles- spindle shaped, uninucleate. ( $\frac{1}{2} + \frac{1}{2} = 1$ mark)	2
27.	Monocot plant- leaves with parallel venation, trimerous flowers. ( $\frac{1}{2} + \frac{1}{2} = 1$ mark) Dicot plant- leaves with reticulate venation, pentamerous c flowers. ( $\frac{1}{2} + \frac{1}{2} = 1$ mark) OR Any two distinguishing features (1+1=2 marks)	2
	<b>End of the Question Paper</b>	

FINAL EXAMINATION

FEBRUARY 2019

CLASS IX

Marking Scheme – SCIENCE[PHYSICS][THEORY]

	VALUE POINTS	Split up marks
<b>SECTION A</b>		
1.	BIO	1
2.	BIO	1
<b>SECTION B</b>		
3.	CHE	2
4.	(a) (i) The magnitude of average velocity of an object is equal to its average speed only when the object moves along a straight line path in uniform motion. (ii) Speed at any instant of time  OR (b) (i) A body has non- uniform acceleration if its velocity changes by unequal amounts in equal intervals of time. (ii) The graph signifies that the body is moving with a constant velocity .	1 1  1 1
5.	BIO	2
<b>SECTION C</b>		
6.	(i) If the masses of both the objects are doubled (made 2 times each), the force between them will become $2 \times 2 = 4$ times. (ii) A block of plastic released under water comes up to the surface of water because the buoyant force (or upthrust) acting on the block of plastic due to water is greater than its weight. The buoyant force is greater because the density of water is greater than the density of plastic. (iii) Pressure is inversely proportional to the area of contact. Hence sharp tip of the needle helps in easy penetration	1 1 1
7.	Graph and introduction Derivation of $S = ut + \frac{1}{2} a t^2$ .	1 ½ 1 ½
8.	(i) Speed of sound wave = Frequency $\times$ Wavelength (ii) Any one difference between loudness and intensity of sound (iii) The ceilings of concert halls are made curved so that sound, after reflection from the curved ceiling, reaches all the parts of the hall. A curved ceiling actually acts like a large concave soundboard and reflects sound down onto the audience sitting in the hall.	1 1 1

	<p style="text-align: center;">OR</p> <p>(i) The sound wave is called a longitudinal wave because in a sound wave the particles of the medium vibrate back and forth in the 'same direction' in which the wave is moving.</p> <p>(ii) Quality (or Timbre) of sound.</p> <p>(iii) The object to be cleaned is placed in a cleaning solution and ultrasound waves are passed into the solution. Due to their high frequency, the ultrasound waves stir up the cleaning solution. Because of stirring, the particles of dust and grease sticking to the dirty object vibrate too much, become loose, get detached from the object and fall into solution. The object gets cleaned thoroughly.</p>	<p>1</p> <p>1</p> <p>1</p>
9.	<p>Definition</p> <p>Explanation with an example</p> <p><math>1 \text{ kWh} = 3.6 \times 10^6 \text{ J}</math></p>	<p>1</p> <p>1</p> <p>1</p>
10	CHE	3
11	<p>CHE</p> <p>OR</p> <p>CHE</p>	3
12	CHE	3
13	BIO	3
14	<p>BIO</p> <p>OR</p> <p>BIO</p>	3
15	BIO	3
<b>SECTION D</b>		
16	<p>(a)(i) Statement of law of conservation of energy.</p> <p>(ii) Proof of the conservation of energy in the case of a freely falling object.</p> <p>(iii) Muscular energy of the rider changes to kinetic energy</p> <p style="text-align: center;">OR</p> <p>(b) (a)(i) Definition of kinetic energy</p> <p>Expression for kinetic energy derivation</p> <p>(ii) No, because Kinetic energy is a scalar quantity.</p> <p>(iii) Work done = <math>\frac{1}{2} m v^2</math>.</p>	<p>1</p> <p>3</p> <p>1</p> <p>1</p> <p>2</p> <p>1</p> <p>1</p>
17	<p>(i) Statement of Newton's Second law of motion.</p> <p>(ii) More damage happens due to large change in momentum</p> <p>(iii) Definition of impulse</p> <p>(iv) <math>F = m (v - u) / t</math></p> <p><math>m = \frac{2 \times 10}{3} = 6.66 \text{ kg}</math></p> <p>(v) Lighter body</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>
18	<p>CHE</p> <p>OR</p> <p>CHE</p>	5



19	CHE	5
20	BIO	5
21	BIO OR BIO	5
<b>SECTION E</b>		
22	(a) $\text{Density} = \frac{\text{mass}}{\text{volume}} = \frac{120}{24} = 5 \text{ g mL}^{-1}$  OR (b) Relative density is defined as the ratio of a substance to the density of water . Density of silver = $10.8 \times 1000 = 10800 \text{ kg m}^{-3}$	2  1 1
23	$40 + i = 90$ $i = 90 - 40 = 50^0$	2
24	CHE OR CHE	2
25	CHE	2
26	BIO	2
27	BIO OR BIO	2
	<b>End of the Question Paper</b>	

# INDIAN SCHOOL MUSCAT

**SET C**

## FINAL EXAMINATION

**FEBRUARY 2019**

### CLASS IX

#### Marking Scheme – Chemistry [THEORY]

	VALVUE POINTS	Split up marks
<b>SECTION A</b>		
1.	BIO	1
2.	BIO	1
<b>SECTION B</b>		
3.	(i)Agricultural substances such as fertilizers and pesticides are used to increases crop yield and some percentage of these washed into the water bodies that pollute the water. (ii)Sewage from homes and wastes from factories are dumped into rivers or lakes	2
4.	PHY OR PHY	2
5.	BIO	2
<b>SECTION C</b>		
6.	PHY	3
7.	PHY	3
8.	PHY OR PHY	3
9.	PHY	3
10.	(a)Phenomenon of change of change of liquid into vapours at any temperature below its bp any two factors (b)298K & 273K	1 1 1
11.	(a)AgNO <sub>3</sub> +NaCl--→AgCl+NaNO <sub>3</sub>  X+5.85=14.35+8.5 X=17.0g (b)(NH <sub>4</sub> ) <sub>2</sub> CO <sub>3</sub> ammonium carbonate C)No of atoms N=nxNo =0.1x6.022x10 <sup>23</sup> =6.022x10 <sup>22</sup>	3  (½) (1/2) (1/2+1/2)

	OR (a)Fe Zn (1/2+1/2) (b)group of atoms carry either +ve or -ve charge. (1/2+1/2) eg CO <sub>3</sub> <sup>2-</sup> (c)define (1)					
12.	(a)(i)2,8,7 (ii)7 (b)any two postulates					2 1
13.	BIO					3
14.	BIO OR BIO					3
15.	BIO					3
SECTION D						
16.	PHY OR PHY					5
17.	PHY					5
18.	Sl no	property	solution	colloids	suspension	3
	1	transparency	transparent	translucent	opaque	
	2	stability	stable	stable	unstable	
	3	filtration	Can't be filtered	Can't be filtered	Can be filtered	1
	Define Element-sodium compound-water OR (a)(i)sublimation (ii) magnetic separation (iii)evaporation/chromatography (iv) centrifugation  (b)Flow diagram					1 1 2 3
19.	(a)(i)Ne					1
	(ii)10					1
	(iii)drawing					1
	(b)Co					1
	(c)(i)2 (ii)nucleus					½+1/2

20.	BIO	
21.	BIO OR BIO	5
SECTION E		
22.	PHY OR PHY	2
23.	PHY	
24.	(a)evolution of gas (b)white colour OR (a)evaporation (b)any one disadvantage	2
25.	(i)hetero (ii)homo (iii) hetero (iv)homo	1 1 Or 1 1
26.	BIO	2
27.	BIO OR BIO	2
End of the Question Paper		

**INDIAN SCHOOL MUSCAT**  
**FINAL TERM EXAMINATION**

**SET C**

**FEBRUARY 2019**

**CLASS IX**

**Marking Scheme – BIOLOGY[THEORY]**

	VALVUE POINTS	Split up marks
<b>SECTION A</b>		
1.	Biotic factors- insects, rodents Abiotic factors- inappropriate moisture and temperature. (any two factors)	$\frac{1}{2} + \frac{1}{2} = 1\text{mark}$
2.	Tallness and profuse branching	$\frac{1}{2} + \frac{1}{2} = 1\text{mark}$
<b>SECTION B</b>		
3.	CHE	2
4.	PHY OR PHY	2
5.	Similarities- Bilaterally symmetrical and triploblastic. ( $\frac{1}{2} + \frac{1}{2} = 1\text{mark}$ ) Dissimilarities- Body cylindrical in Nematoda, Segmented in Annelida or any other dissimilarity ( $\frac{1}{2} + \frac{1}{2} = 1\text{mark}$ )	2
<b>SECTION C</b>		
6.	PHY	3
7.	PHY	3
8.	PHY OR PHY	3
9.	PHY	3
10.	CHE	3
11.	CHE OR CHE	3
12.	CHE	3
13.	In plant cells, vacuoles are filled with cell sap to provide turgidity and rigidity to the cell. The cell sap contains sugars, amino acids, proteins etc.	3

	Chronic diseases- life time or last for long period, has major effects on the health (½+ ½=1 mark) Examples (½+ ½=1 mark) Any one infectious disease with its pathogen. (½+ ½=1 mark) Any two symptoms (½+ ½=1 mark)	
<b>SECTION E</b>		
22	PHY OR PHY	2
23	PHY	2
24	CHE OR CHE	2
25	CHE	2
26	Any two distinguishing features of each. (½+ ½+ ½+½=2 marks)	2
27	Voluntary muscles- long, cylindrical and unbranched. (½+ ½=1 mark) Involuntary muscles- spindle shaped, uninucleate. (½+ ½=1 mark) OR Monocot plant- leaves with parallel venation, trimerous flowers. (½+ ½=1 mark) Dicot plant- leaves with reticulate venation, pentamerous c flowers. (½+ ½=1 mark)	2
	<b>End of the Question Paper</b>	