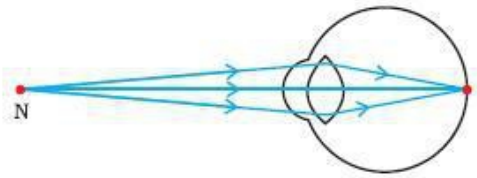
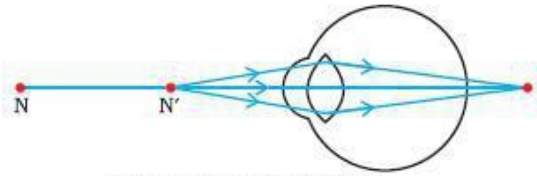
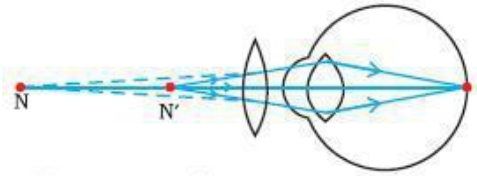
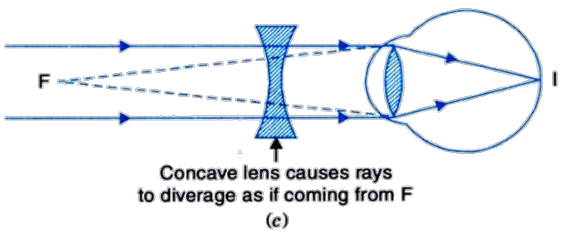
INDIAN SCHOOL MUSCAT
SECOND PRELIMINARY EXAMINATION
FEBRUARY 2019
CLASS X

A

Marking Scheme – PHYSICS

	SECTION A	
1.	BIO	1
2.	BIO	1
	SECTION B	
3.	CHE	2
4.	Convex mirror (1) labelled ray diagram (1). OR the refractive index of the medium B relative to medium A is = sin60/sin45 (1) = **√3** /**√2** (1)	2
5.	BIO	2
	SECTION C	
6.	Resistance of 1st lamp, R1 = $V1^2/P1 = (220)^2/100 = 484$ ohm (1) resistance of 2nd lamp, R2 = $V2^2/P2 = (220)^2/200 = 242$ ohm. (1) lamps are connected in series , Req = R1 + R2 = 484 + 242 = 726 ohm (½) so, I = V/Req = 220/726 = 20/66 Amp = 10/33 = 0.3 A (1/2)	3
7.	(a)The energy produced by the surge of ocean water during high and low tides due to difference in sea-levels is called tidal energy. The high and low tides occur due to the gravitational pull of the moon. This causes enormous movement of water. (1) (b) Tidal energy is harnessed by constructing a dam near the shores. During the high tides water flows into the dam and during the low tides, water flows out. This flowing water rotates the turbine, present at the opening of the dam and produces electricity. (1) (c) any limitation of tidal energy (1)	3
8.	two properties of filed lines (1) field pattern due to solenoid with poles marked (2m) OR • Frequency of Alternating current is equal to the number of cycles completed in one	3

	second. • In India, frequency of AC is 50 Hz i.e. 50 cycles per second. • An alternating current is considered to be advantageous over direct current for long range transmission of electric energy because it can be transmitted over long distances to distant places without much loss of electric power as compared to direct current	
9.	H**ypermetropia. (1/2)** by using **convex lens (1/2)**  *(a) Near point of a Hypermetropic eye*  *(b) Hypermetropic eye*  *(c) Correction for Hypermetropic eye* (1+1)	3
	SECTION D	
	Myopia. (1) The causes which cause Myopia are (2 x ½ =1) • Due to the high converging power of the eye lens. • Due to Being Eye ball to long . It can be corrected by using a concave lens . (1)  *(c)* (1) (b) near point :25 cm (1/2)	5

	Far point : Infinity(1/2) OR (a) 1) cornea is the colorful part of the eye. it helps in entering of light 2) iris is the part which regulate the entering of light by contrasting and expanding. 3) crystalline lens is the eye lens which is convex lens it helps to see the object and form the image. 4) cilliary muscle helps to adjust the focal length of the eye to see the image. (1/2 x 4 = 2) (b) The sun is located near the horizon of the earth during sunrise and hence light travels a longer distance through the earth's atmosphere. the particles that are suspended in the air scatter the light of shorter wavelength like the blue colour. the light that reaches the earth is of longer wavelength that is red.t has it appears red. (2) This phenomenon will not be observed by an astronaut because on the moon there is no atmosphere. hence there will not be any scattered light and it will appear dark. (1)	
10.	(i) When key is pressed on, the galvanometer needle deflects momentarily in one direction. (ii) When the current in the coil C_1 is switched off, the galvanometer needle deflects again momentarily but in opposite direction to that in the previous case. (iii) When current is passed continuously through coil C_1 , no deflection is observed in the galvanometer. (iv) Electromagnetic Induction: The process, by which a changing magnetic field in a conductor induces a current in another conductor placed nearby, is called electromagnetic induction. (v)Fleming's right hand rule . Statement of Fleming's right hand rule. (1 x 5 = 5)	5
11.	CHE OR CHE	5
12.	CHE	5
13.	BIO	5
14.	BIO OR BIO	5
	SECTION E	
15.	(i) angle of incidence is greater (1/2) (ii) angle of emergence increases as angle of incidence increases (1/2) (iii) there is no refraction when the incident ray is at normal (1) OR (i) concave mirror. Since it gives a clear image of a distant object at 35cm, the focal length of the mirror is also 35cm. (1/2 +1/2) (ii)Since the focal length has been determined to be 35cm, we know that incoming light rays from infinity will converge at the focus. Since the tree is distant, we can approximate it to be located at	2

	infinity. As a result, Sunita gets a clear image of a distant object at the focus of her mirror (white screen). (1)	
16.	$R_3 > R_2 > R_1$ (1) Reason (1)	2
17.	CHE OR CHE	2
18.	CHE	2
19.	BIO	2
20.	BIO OR BIO	2
	End of the Question Paper	

INDIAN SCHOOL MUSCAT

B

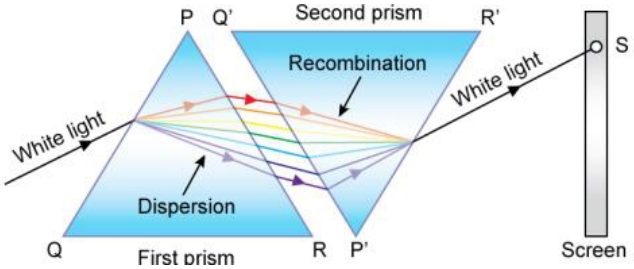
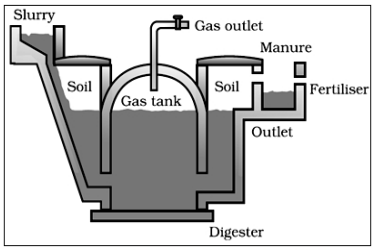
SECOND PRELIMINARY EXAMINATION

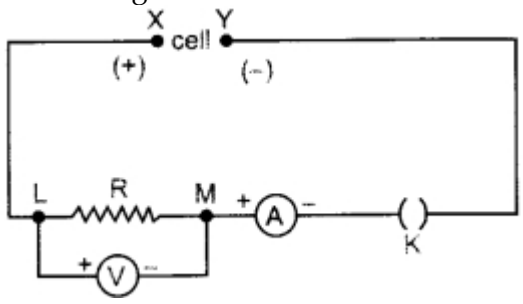
FEBRUARY 2019

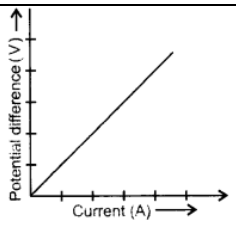
CLASS X

Marking Scheme – PHYSICS

	SECTION A	
1.	BIO	1
2.	BIO	1
	SECTION B	
3.	CHE	2
4.	f=200cm u=-400cm mirror formula:1/f=1/u+1/v (1/2) 1/200=1/-100+1/v 1/v=1/200+1/400=3/400 v=400/3=133.3 cm (1/2) m=-v/u = -133.3/-400 = 0.33 (1) OR Definitions : centre of curvature Pole v = -45 cm f = -20 cm 1/v +1/u = 1/f 1/u = - 5/180 u = -180/5 = -36 cm	2
5.	BIO	2
	SECTION C	
6.	The energy produced by the surge of ocean water during high and low tides due to difference in sea-levels is called tidal energy. The high and low tides occur due to the gravitational pull of the moon. This causes enormous movement of water. (1)	3

	(b) Tidal energy is harnessed by constructing a dam near the shores. During the high tides water flows into the dam and during the low tides, water flows out. This flowing water rotates the turbine, present at the opening of the dam and produces electricity.(1) Any one limitation of tidal energy (1)	
7.	The phenomenon of splitting of white light into its constituent seven colours on passing through a glass prism is called dispersion of light. (1)  (2)	3
8.	Colour of the clear sky is blue, because molecules of air scatter blue light from the sun as it has least wavelength . (1) red which has the highest wavelength of all the colors we can see is scattered the least. So red light is able to travel the longest distance through fog, rain. (1) **Due to atmospheric refraction. When the sun is slightly below the horizontal line, then the light of sun is coming from less dense air to more dense air. Hence due to refraction , it bends towards the normal. so, light is refracted downwards as it passes through the atmosphere and the appears to be raised above the horizontal line. (1)** OR **Fig 11.11 NCERT TB (1)** **Activity 11.3 (2)**	3
9.	Biomass refers to those living and non-living organic materials that can be used as sources of energy in the form of fuel. (1/2)  Schematic diagram of a bio-gas plant (1) The plant has a dome-like structure built with bricks. A slurry of cow-dung and water is made in the mixing tank from where it is fed into the digester. The digester is a sealed chamber in which there is no oxygen. Anaerobic micro-organisms that do not require oxygen decompose or break down complex compounds of the cow-dung slurry. It takes a few days for the decomposition process to be complete and generate gases like methane, carbon dioxide, hydrogen and hydrogen sulfide. The bio-gas is stored in the gas tank above the digester from which they are drawn through pipes for use. (1 ½)	3

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.	$V = \frac{W}{q}$ or $W = V \times q$ (*i*) but $q = I \times t$ So, $W = V \times It$ (*ii*) This work done will appear in the form of heat produced in the wire, i.e. $H = VIt$ (*iii*) Using Ohm's law, $V = IR$ So, $H = (IR)\ It = I^2Rt$ This is the expression for the heat produced in the wire. This is called Joule's law of heating. Heat produced in one minute $H = P \times t = 12\ \text{W} \times 60\ \text{s} = 720\ \text{J}$ (2+1+2) OR Statement : ohms law (1) Conditions: physical condition such as temperature of the conductor remains same. (1) Experimental verification: (3) Circuit diagram:  Explanation:	5

	 The slope of V-I graph gives the value of resistance of the conductor at the given temperature.	
17.	(i)When key is pressed on, the galvanometer needle deflects momentarily in one direction. (ii) When the current in the coil C_1 is switched off, the galvanometer needle deflects again momentarily but in opposite direction to that in the previous case. (iii) When current is passed continuously through coil C_1 , no deflection is observed in the galvanometer. (iv) Electromagnetic Induction: The process, by which a changing magnetic field in a conductor induces a current in another conductor placed nearby, is called electromagnetic induction. (v) Fleming's right hand rule . Statement of Fleming's right-hand rule. (1 x 5)	5
18.	CHE OR CHE	5
19.	CHE	5
20.	BIO	5
21.	BIO OR BIO	5
	SECTION E	
22.	LC of ammeter = 20 mA (½) Reading of ammeter = 140 mA (½) LC of voltmeter = 0.2 V (½) Reading of voltmeter = 1.4 V (½) OR (i) dimmest: A (ii)with maximum intensity B. (1/2+1/2) (ii) reason (1)	2

23.	(i) The image distance increases, when an object is moved towards the lens. Thus, in order to focus the image, the student moves the lens away from the screen. (ii) The size of the image increases when the object is moved towards the lens. (iii) When the object is moved very close to the lens, no image is formed on the screen. A virtual image is formed behind the object on the same side of the screen.	2
24.	CHE OR CHE	2
25.	CHE	2
26.	BIO	2
27.	BIO OR BIO	2
	End of the Question Paper	

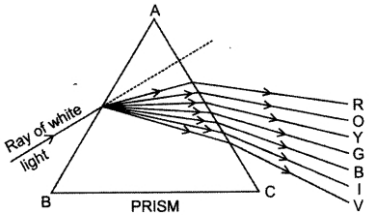
INDIAN SCHOOL MUSCAT
SECOND PRELIMINARY EXAMINATION
FEBRUARY 2019
CLASS X

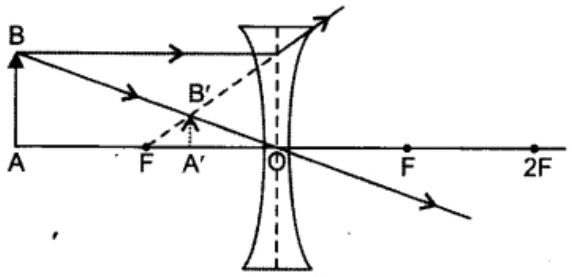
C

Marking Scheme – PHYSICS

	SECTION A	
1.	BIO	1
2.	BIO	1
	SECTION B	
3.	CHE	2
4.	(ii) $P = V \times I = 220 \times 3.4 = 748$ Watt $P = V^2 / R$ (i) $R = V^2/P = 220^2 / 748 = 64.71\ \Omega$ OR 10 Ω and 20 Ω are connected in series, their equivalent resistance is $R_s = R_1 + R_2$ $= 10 + 20 = 30\ \Omega$ (*i*) Current flowing in the circuit $I = \frac{V}{R_s} = \frac{3}{30}$ $= \frac{1}{10} = 0.1$ A (*ii*) Potential difference across 10 Ω resistor $V = IR$ $= \frac{1}{10} \times 10 = 1$ volt. (1+1)	2
5.	BIO	2

	SECTION C	
6.	The sun is located near the horizon of the earth during sunrise and hence light travels a longer distance through the earth's atmosphere. the particles in the air scatter the light of shorter wavelength like the blue color. the light that reaches the earth is of longer wavelength that is red .Hence it appears red. (2) this phenomenon will not be observed by an astronaut because on the moon there is no atmosphere. hence there will not be any scattered light and it will appear dark (1)	3
7.	Short circuiting: When electric circuit offers very low resistance to the flow of current through it, the current increases heavily and the circuit is said to be short circuited. It occurs when live wire touches the neutral wire. (1) Overloading: when a large number of high power appliances a large amount of current is drawn from the circuit which is overloading . (1) Safety measure device: Fuse. (1)	3
8.	u = -60 cm v = +120 cm 1/f = 1/v – 1/u (½) = 1/120 +1/ 60 F = 40 cm (1) h_i/h_o = v/u (½) h_i = -10 cm (1) OR f=200cm u=-400cm mirror formula:1/f=1/u+1/v (1/2) 1/200=1/-100+1/v 1/v=1/200+1/400=3/400 v=400/3= 133.3cm (1) m=-v/u (½) = -133.3/-400 = 0.33 (1)	3
9.	(i) value of current and (ii)strength of magnetic field. (½ + ½) (b) (i) When the direction of current is at right angle to the direction of magnetic field, the force is maximum.(ii) force will be minimum when it is parallel to the magnetic field. (½ + ½) (c) No force is experienced by the proton beam. As proton beam is moving along the direction of magnetic field. (½ + ½)	3
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) The process of splitting of white light into its seven constituent colours is called **dispersion** of white light. Dispersion takes place because the speed of light of different colours through a glass prism is different and so, refractive index, therefore, each colour bends (refracts) through different angles with respect to incident ray as they pass through a prism. (b) For dispersion, the two refracting surfaces must be inclined to each other as in case of prism. In rectangular glass slab, the refracting surfaces are parallel to each other. So, dispersion cannot occur. OR	5



Position of image: Between F and optical centre

Nature of image: Virtual, erect and diminished.

(*b*) $f = -15$ cm $\quad v = -10$ cm

(*i*) Using, $\frac{1}{f} = \frac{1}{v} - \frac{1}{u}$, we get

$$\frac{1}{u} = \frac{1}{v} - \frac{1}{f} = \frac{1}{-10} - \frac{1}{-15} = -\frac{1}{30}$$

$\therefore u = -30$ cm

Therefore the object is at 30 cm from the concave lens on its left side.

(*ii*) $m = \frac{-10}{-30} = \frac{1}{3}$

(*iii*) m is +ve, so image is erect. v is –ve, so image is virtual. As $m < 1$, image is diminished.

17. **Tidal energy:** Due to the gravitational pull of mainly the moon on the spinning earth, the level of water in the sea rises and falls. This phenomenon is called high and low tides and the difference in sea-levels gives us tidal energy. Tidal energy is harnessed by constructing a dam across a narrow opening to the sea. A turbine fixed at the opening of the dam converts tidal energy to electricity. (1)

Ocean thermal energy: The water at the surface of the sea or ocean is heated by the Sun while the water in deeper sections is relatively cold. This difference in temperature is exploited to obtain energy in ocean-thermal-energy conversion plants. These plants can operate if the temperature difference between the water at the surface and water at depths up to 2 km is 20 K (20°C) or more. The warm surface-water is used to boil a volatile liquid like ammonia. The vapours of the liquid are then used to run the turbine of generator. The cold water from the depth of the ocean is pumped up and condense vapour again to liquid (2).

Wave Energy: Waves can also be a good source of energy. Many devices are being designed and tested to produce wave energy. For example; a hollow tower is built near the seashore. When water gushes in the tube because of wave, it forces the air upwards. The kinetic energy of air in the tube is used to run a turbine. (1)

cooker which was covered with a plane glass slab would be more efficient. The glass lid allows the heat radiation from sun to enter the solar cooker but does not allow the reflected heat radiation to escape or go outside the box. Thus, heat trapped inside the box increases the temperature. Glass lid also reduces heat loss due to reflection. (1)

5

18.	CHE OR CHE	5
19.	CHE	5
20.	BIO	5
21.	BIO OR BIO	5
	SECTION E	
22.	Student D who measured 40degree Since opposite sides of a slab are parallel i= e OR away from screen depending upon the position of the object	2
23.	I=V/R = 1A R5=R1+R2=15 OHM I = 1/3 A OVERALL CHANGE 2/3 A	2
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 A

II PRELIMINARY EXAMINATION

FEBRUARY 2019

CLASS X

Marking Scheme – Chemistry [THEORY]

3	Resources which take a long time to be made. / can't be produced immediately. Eg:Coal, Petroleum	1 1
10.	Oxidized- HCl , Reduced-MnO_2 , Oxidizing agent –MnO_2 ,Reducing agent- HCl Cu $(NO_3)_2$ (aq) +2 Ag(s)	0.5*4 1
11.	Metallic Degradation is called Corrosion Rusting Black layer on its surface due to silver sulphide OR X- Sodium hydroxide , formula- Na OH Neutralization Rn: $NaOH + HCl \rightarrow NaCl + H_2O$	1 1 1 0.5*2 1 1
12	E B B-due to less effective nuclear charge	1 1 1
18.	One equation for each reaction OR a)Ethanol and ethanoic acid b)Ketone , Carboxylic acid c) any one test d)any 2	1 *5=5 0.5*2 0.5*2 1 2
19.	a) Any 2 b) definition c)diagram	0.5*2 1*3 1
24.	$FeSO_4$ and Al. Al is more reactive than Fe. Cu is less reactive. So reaction does not take place in the first case. OR A white ppt: of Barium sulphate. It is a Double displacement rn: or precipitation rn:	1+1 1+1
25.	It is an exothermic rn: / a white powder of slaked lime-combination rn:	2

INDIAN SCHOOL MUSCAT

SET B

II PRELIMINARY EXAMINATION

FEBRUARY 2019

CLASS X

Marking Scheme – CHEMISTRY [THEORY]

3.	Global warming / if combustion takes place in insufficient air CO is formed./oxides of sulphur,nitrogen are formed.	2
10.	a) Heat energy is liberated. b) Oxidation- addition of oxygen/removal of hydrogen/loss of electron Reduction- addition of hydrogen/ removal of oxygen/gain of electron c) Zn is oxidized and CuO is reduced.	1 0.5 0.5 0.5+0.5
11.	a) X- Chlorine Y- Bleaching powder /$CaOCl_2$ $Ca(OH)_2 + Cl_2 \rightarrow CaOCl_2 + H_2O$ OR Sodium hydrogen carbonate $NH_3 + CO_2 + H_2O + NaCl \rightarrow NaHCO_3 + NH_4Cl$ $Na_2CO_3 + CO_2 + H_2O \rightarrow 2NaHCO_3$ Any 1use	1+1 1 1 1 1
12.	a)D b)B c)D_2B	1 1 1
18.	A-ethanol (C_2H_5OH) B-ethanoic acid (CH_3COOH) When they react ester is formed. $CH_3CH_2OH + 2(O) \xrightarrow{alk.KMnO4} CH_3COOH + H_2O$ $CH_3COOH + C_2H_5OH \xrightarrow{con.H2SO4} CH_3COOC_2H_5 + H_2O$ OR i) Definition ii) Methanol/pyridine/coppersulphate iii) Any two	1*5 1+1 1+1+1
19.	i)Copper ii)Electrolytic refining iii)$2Cu_2S + 3O_2 \rightarrow 2Cu_2O + 2SO_2$ $Cu_2S + Cu_2O \rightarrow 6CuO + SO_2$ Brass- Cu and Zinc	1 1 1+1 1
24.	The green Ferrous sulphate crystals change to brown on heating and colorless gas is evolved./ Decomposition rn OR Zn is more reactive than Fe. / Displacement Rn:/ green colour to colourless	1+1 1+1

25.	C, B ,A , D. As the pH value increases the [H+]ion decreases	2

INDIAN SCHOOL MUSCAT

SET C

II PRELIMINARY EXAMINATION

FEBRUARY 2019

CLASS X

Marking Scheme – CHEMISTRY [THEORY]

3.	Fossil fuels contain carbon, sulphur, nitrogen .When they are burnt harmful gases are formed./leading to Global warming.	2
10.	a) Energy is liberated b) Definition c) Zn- oxidized , CuO- reduced	1 1 1
11.	The compound is bleaching powder -formula is $CaOCl_2$. $Ca(OH)_2 + Cl_2 \rightarrow CaOCl_2$ OR Calcium phosphate Acid formed in the mouth. Tooth paste is basic so neutralize the effect.	1+1 1 1 +1 1
12.	a) A b) E c) AB	1 1 1
18.	X-Ethanol , Y-Ethene , Ethane Ethanol to ethene --1st rn: Ethene to ethane ---2nd rn: OR i) Definition ii) Pyridine/Copper sulphate/methanol iii) Any two	1+1+1 1+1 1+1 1 1+1
19.	X- Na ,Y-NaOH , Z-H_2 Diagram ,Labeling ,Explanation	0.5+0. 5+1 1+1+1
24.	Changes to red /acidic OR Brisk effervescence /the evolution of colourless and odourless gas	1+1 1+1
25.	i)Iron ii) Displacement Rn:	1 1

INDIAN SCHOOL MUSCAT

SET A

II PRELIMINARY EXAMINATION

FEBRUARY 2019

CLASS X

Marking Scheme – BIOLOGY

	VALUE POINTS	Split up marks
	SECTION A	
1.	Gamete refers to the sex cells, i.e., the egg or the sperm/haploid. Zygote is a cell formed when two gamete cells are joined by means of sexual reproduction/diploid.	½ +1/2 =1
2.	Coliform is a group of bacteria found in human intestine whose presence in water indicates contamination by disease causing microorganisms	½ +1/2 =1
	SECTION B	
3.	CHE	2
4.	PHY OR PHY	2
5.	We cannot say whether it is dominant or recessive because the information is insufficient .	1+1=2
	SECTION C	
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.Study of food chain helps in understanding food relationship and interaction among various organisms in an ecosystem 2. The basic mechanism of transfer of food energy and nutrients can be studied. 3. Can also understand movement of toxic substances in a food chain and the problem of biological magnification.	1 mark each 3
14.	1. Testosterone-Regulate sperm formation. Development of secondary sexual characteristics in males . Estrogen- Development of secondary sexual characteristics in females. 2. As the rate of general body growth begins to slow down, reproductive tissues begin to mature. This period is called puberty. OR 1. Sexual reproduction- Both the parents are involved, Fusion of gametes Asexual reproduction- Single parent is involved, No fusion of gametes. (Any relevant point) Diagram, text book page no:135, Fig 8.9	2+1=3 2+1=3
15.	Analogous organs: The organs having the same functions but different in structure, origin and constituting parts are called analogous organs. Example: The wings of bats and the wings of birds are analogous organs . Homologous organs **:** The organs having the same structure, origin and constituting parts but different functions are called homologous organs. Example:Tthe forearms of a horse and the hands of human.	1 mark each for definition. ½ each for example 3
	SECTION D	
16.	PHY OR PHY	5
17.	PHY	5
18.	CHE OR CHE	5
19.	CHE	5
20.	1. Plant hormone that promotes growth is auxin. It is synthesized at the tip/apex of the plant stem/Gibberellin present all over the plant body. 2. Pituitary gland present in the brain , if excess-gigantism, if less-dwarfism. 3. Diagram test book page:117, Fig 7.2	1 5 1 ½ Diagram-1 Label 1½
21.	1. Enzymes are biological catalysts Example: Salivary amylase, converts starch into simple sugar (Maltose)/Any other 2. i) Digestive enzymes – Foods need to be broken into their small or simpler. molecules so that they can be absorbed into the bloodstream. Enzymes are needed for the chemical breakdown of food and speeding up the digestive process./ helps in digestion. (ii) Hydrochloric acid – Hydrochloric acid helps to kill the germs . It creates acidic medium for the pepsin to act on food to breakdown proteins. (iii) Villi – Villi are finger like projections in the small intestine. They help to increase the surface area for absorption of the digested food. Villi are richly supplied with blood vessel which help to absorb digested food in to the blood stream. OR 1.Diagram text book page: 110, Fig:6.13	2+3 =5 Diagram-3

	2. 1.Thin walls: The air sac walls are very thin so that gases can quickly diffuse through them. . 2. Capillary network: The air sacs or the alveoli have a large capillary network so that large volume of gases can be exchanged. 3.Large surface area.	Points- 2 mark
	SECTION E	
22.	PHY OR PHY	2
23.	PHY	2
24.	CHE OR CHE	2
25.	CHE	2
26.	1. Removal of peel from leaf 2. Put the stained peel on a clean slide containing water. 3. Stain with safranin. 4. Place the cover slip without any air bubbles.	½ mark each 2
27.	1. The experiment set up must be air-tight 2. Should not forget to keep KOH inside the beaker OR 1. The cell elongates. 2. Nuclear division (Karyokinisis) 3. Cytoplasmic division (Cytokinesis) 4. The cell divides into two daughter cells	1 m Each 2 ½ mark Each
	End of the Question Paper	

INDIAN SCHOOL MUSCAT

SET B

SECOND PRELIMINARY EXAMINATION

FEBRUARY 2019

CLASS X

Marking Scheme – BIOLOGY

	VALVUE POINTS	Split up marks
	SECTION A	
1.	Contain single sex cell or gamete. Contain both male and female gametes in the same organism .	½+1/2 =1
2.	1. Concentration of a pesticide increases once it enters a food chain. 2. Second trophic level	½ +1/2=1
	SECTION B	
3.	CHE	2
4.	PHY OR PHY	2
5.	No, since the plants are self-pollinating, which means that the pollens are transferred from the anther of one flower to the stigma of the same flower or of another flower of the same plant, so geographical isolation cannot prevent speciation in this case.	1+1=2
	SECTION C	
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.	Analogous organs: Those organs which have different basic structure but have similar appearance and perform similar functions are called analogous organs. Example - wings of bird	Definitio n -1 mark

	and insect. Homologous organs: Those organs which have same basic structure but different functions are called homologous organs. Example: fore limb of humans and fore limb of lizard.	each Example ½ m each3
14.	1. DNA copying is not perfectly accurate and the resultant errors are a source of variations in populations of organisms. 2. Seminal vesicle and prostate gland Provides nutrition to the sperm, Easy transportation of sperm OR Diagram text book, page no: 135	1 1 1 3
15.	We must conserve our forests as they are of great value. The reasons for conserving forests are: 1. Forests help in protection of land and retaining sub-soil water. 2. Forests check floods and maintain ecosystem. 3. Source for food and medicine, Habitat for animals and plants. Therefore, forests must be conserved for economic and social growth Deforestation caused by industrial needs or development projects like building roads or dams.	1 1 mark each 3
	SECTION D	
16.	PHY OR PHY	5
17.	PHY	5
18.	CHE OR CHE	5
19.	CHE	5
20.	1. Iodine stimulates the thyroid gland to produce thyroxin hormone. Deficiency of this hormone results in the enlargement of the thyroid gland. This can lead to goiter. 2. (i)Positive phototropism: shoots growing towards light. (ii)Negative phototropism: roots growing away from light towards ground. (iii) Positive geotropism: growth of roots towards earth due to the pull of the earth. (iv)Negative geotropism: shoots growing away from the earth. 3. Cerebellum in hind-brain controls the posture and balance of the body. 4. Gustatory receptors – these are sensitive to taste Olfactory receptors – these are sensitive to smell.	1M 5 ½ each 1 M ½ Each
21.	1. Herbivores eating grass need a longer intestine to allow the cellulose to be digested. 2. (i)Amylase- carbohydrate, (ii) Lipase- fat, (iii) Trypsin- protein. Digestion of protein. 3. Carries digested and absorbed fats, drains excess fluid from extra cellular space to blood OR 1.Diagram, page no: 97	½ 5 3 ½ 1

	Function s of stomata- Exchange of gas, Transpiration 2 .It is due to sudden build-up of lactic acid in our muscles after long exercise. 3. It flattens during inhalation , thus increasing the volume of the thoracic cavity.	Diag-3 1 m each
	SECTION E	
22.	PHY OR PHY	2
23.	PHY	2
24.	CHE OR CHE	2
25.	CHE	2
26.	1. Germinating seeds (living) should be used 2. Should handle with care	1+1=2
27.	Diagram of binary fission in Amoeba OR Budding in yeast Diagram	2 1 mark 1 mark
	End of the Question Paper	

INDIAN SCHOOL MUSCAT

SET C

II PRELIMINARY EXAMINATION

FEBRUARY 2019

CLASS X

BIOLOGY

	VALVUE POINTS	Split up marks
	SECTION A	
1.	Contain single sex cell or gamete. Contain both male and female gametes in the same organism .	½ +1/2 =1
2.	Coliform is a group of bacteria found in human intestine whose presence in water indicates contamination by disease causing microorganisms	½ +1/2 =1
	SECTION B	
3.	CHE	2
4.	PHY OR PHY	2
5.	No, since the plants are self-pollinating, which means that the pollens are transferred from the anther of one flower to the stigma of the same flower or of another flower of the same plant, so geographical isolation cannot prevent speciation in this case.	1+1=2
	SECTION C	
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.Study of food chain helps in understanding food relationship and interaction among various organisms in an ecosystem 2. The basic mechanism of transfer of food energy and nutrients can be studied. 3. Can also understand movement of toxic substances in a food chain and the problem of biological magnification.	1 mark each 3
14.	1. DNA copying is not perfectly accurate and the resultant errors are a source of variations in populations of organisms. 2. Seminal vesicle and prostate gland Provides nutrition to the sperm, Easy transportation of sperm OR Diagram text book, page no: 135	1 1 1 3
15.	Analogous organs: The organs having the same functions but different in structure, origin and constituting parts are called analogous organs. Example: The wings of bats and the wings of birds are analogous organs . Homologous organs **:** The organs having the same structure, origin and constituting parts but different functions are called homologous organs. Example:Tthe forearms of a horse and the hands of human.	1 mark each for definition. ½ each for example 3
	SECTION D	
16.	PHY OR PHY	5
17.	PHY	5
18.	CHE OR CHE	5
19.	CHE	5
20.	1. Iodine stimulates the thyroid gland to produce thyroxin hormone. Deficiency of this hormone results in the enlargement of the thyroid gland. This can lead to goiter. 2. (i)Positive phototropism: shoots growing towards light. (ii)Negative phototropism: roots growing away from light towards ground. (iii) Positive geotropism: growth of roots towards earth due to the pull of the earth. (iv)Negative geotropism: shoots growing away from the earth. 3. Cerebellum in hind-brain controls the posture and balance of the body. 4. Gustatory receptors – these are sensitive to taste Olfactory receptors – these are sensitive to smell.	1M 5 ½ each 1 M ½ Each
21.	1. Enzymes are biological catalysts Example: Salivary amylase, converts starch into simple sugar (Maltose)/Any other. 2. i) Digestive enzymes – Foods need to be broken into their small or simpler molecules so that they can be absorbed into the bloodstream. Enzymes are needed for the chemical breakdown of food and speeding up the digestive process/ Helps in digestion. (ii) Hydrochloric acid – Hydrochloric acid helps to kill the germs . It creates acidic medium for the pepsin to act on food to breakdown proteins. (iii) Villi – Villi are finger like projections in the small intestine. They help to increase the surface area for absorption of the digested food. Villi are richly supplied with blood vessel which help to absorb digested food in to the blood stream.	2+3 =5 Diagra

	OR 1. Diagram text book page: 110, Fig:6.13 2. Thin walls: The air sac walls are very thin so that gases can quickly diffuse through them. . Capillary network: The air sacs or the alveoli have a large capillary network so that large volumes of gases can b exchanged. 3. Large surface area.	m-3 Points- 2 mark
	SECTION E	
22.	PHY OR PHY	2
23.	PHY	2
24.	CHE OR CHE	2
25.	CHE	2
26.	1. Germinating seeds (living) should be used 2. Should handle with care	1+1=2
27.	1. The experiment set up must be air-tight 2. Should not forget to keep KOH inside the beaker OR 1. The cell elongates. 2. Nuclear division (Karyokinisis) 3. Cytoplasmic division (Cytokinesis) 4. The cell divides into two daughter cells	1 m Each 2 ½ mark Each
	End of the Question Paper	