INDIAN SCHOOL MUSCAT

FIRST PRE BOARD EXAMINATION

SET C

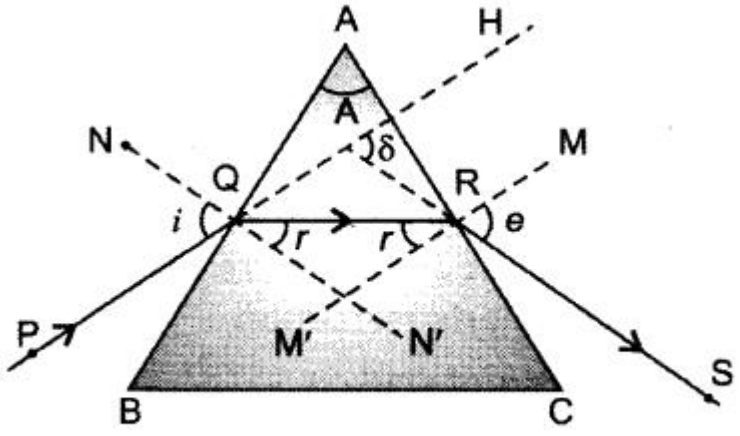
February 2021

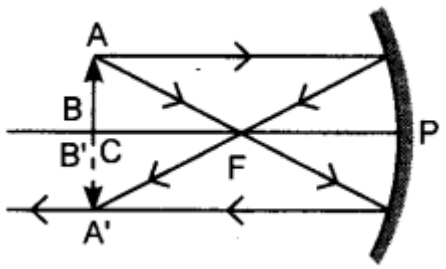
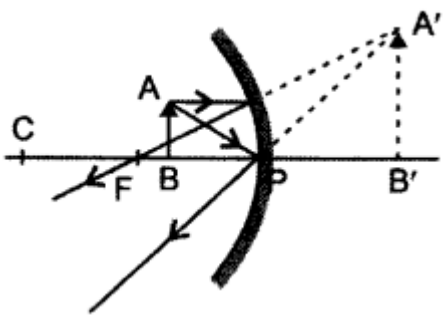
CLASS X

Marking Scheme – SCIENCE

SECTION - A		
Q.NO.	**VALUE POINTS**	
1.	To neutralize the bitter taste of sodium carbonate OR Carbon dioxide	1
2.	To prevent rancidity	1
3.	(b) $AgNO_3$ solution and Copper metal	1
4.	Blue colour having shorter wavelength is scattered most	1
5.	m = -v/u -2 = -v/-10 V = -20 cm	1
6.	Concave mirror, concave lens OR Concave mirror, convex mirror	1
7.	Split rings reverses direction of the current after every half rotation	1
8.	Intersecting point shows two directions, which is not possible	1
9.	In order to get 5 ohm, resistance 3 ohm should be connected in series with the parallel combination of 3 ohm and 6 ohm. OR Resistivity of an alloy is greater than that of pure metal It has high melting point , does not oxidise	1
10.	Difference in the ionic concentration between the soil and xylem cell in the root cell.	1
11.	To synthesize the molecule called ATP which is used as a fuel for all other activities of the cell. (1 mark) OR Pancreatic amylase, lipase / trypsin (any two)(½ X2=1 mark)	1
12.	Natural product, Biodegradable , ecofriendly, non-toxic (any two) (½ X2=1 mark) OR According to ten percent law, the energy transferred will reduce when we go from one trophic level by 10%. So no energy will be left if the level exceed(1mark)	1

13.	No RBC so colourless and less proteins.(two differences)(1/2 X 2= 1 mark)	1
14.	b	1
15.	b. Both A and R are true, and R is not the correct explanation of the assertion.	1
16.	a. Both A and R are true, and R is the correct explanation of the assertion.	1
17.	BIOLOGY- CASE BASED QUESTIONS	1x4
	i)b	
	ii)c	
	iii)c	
	iv)a	
	v)c	
18.	CHEMISTRY- CASE BASED QUESTIONS	1x4
	i)c	
	ii)d	
	iii)d	
	iv)b	
	v)b	
19.	PHYSICS- CASE BASED QUESTIONS	1x4
	i) A	
	ii) A	
	iii) B	
	iv) D	
	i) B	
20.	PHYSICS- CASE BASED QUESTIONS	1x4

	i) A	
	ii) A	
	iii) D	
	iv) C	
	v) B.	
	SECTION - B	
21.	Aerobic-high energy End products-carbon di oxide, water, energy (½ X2=1 mark) Anaerobic-low energy End products-lactic acid, energy(ethanol and carbon di oxide in yeast) (½ X2=1 mark) OR For the exchange of materials and diffusion of gases like co2 and o2. (1X2=2 marks).	2
22.	Thin membrane, surrounded by blood vessels, large surface area.(any two) (1X2=2 marks)	2
23.	(i) C is oxidised to CO and ZnO is reduced to Zn. (ii) H2 is oxidised to H_2O and CuO is reduced to Cu. OR (i) A yellow precipitate of lead iodide appears at the bottom of the test tube. (1) (ii) balanced equation (1)	2
24.	Write any two achievements (1 mark each)	2
25.	 Refraction of light through a glass prism	2
26.	R= V/I = 30/7.5 =4 OHM ¼ =1/10 +1/12+1/X X= 15 OHM	2
	SECTION - C	

27.	Crossing -2 marks Phenotypic ratio-3:1-1/2 mark Genotypic ratio-1:2:1-1/2 mark OR Inaccuracies occurring during copying of DNA- 1 mark Explanation-2 marks	3
28.	Food chain is the interdependence of animals by eating and being eaten, if the number of any one group of organisms increase it will affect the next and the previous trophic levels With any example of food chain explain- Example -1 mark Explanation-2marks	3
29.	1. To provide sufficient supply of energy to maintain body temperature-1 mark 2. They don't move and most cells are dead.-1 mark 3. To prevent the collapse when there is no air-1mark.	3
30.	Molecular formula -1/2 mark each Strucure-1 mark each	3
31.	i)Period-4^{th} Group -2^{nd} (1/2+1/2) ii)XY/XO (1) iii)It is a basic oxide ;it forms base when reacts with water/metal oxides are basic in nature (1)	3
32.	(i)B is the most reactive metal. (ii)B will displace Cu from $CuSO_4$. (iii)B>A>C>D	3
33.	(i)  REAL INVERTED, SAME SIZE AS THE OBJECT,IMAGE AT C 1 MARK -RAY DIAGRAM, ½ MARK STATEMENT (ii)  VIRTUAL ERECT, ENLARGE,BEHID THE MIRROR 1 MARK -RAY DIAGRAM,1/2 MARK STATEMENT	3
	SECTION - D	
34.	a) (i) Ohms law (text book) 1 (ii) circuit diagram 2 (iii) Derivation resistors connected in series 2 OR a)	5

	Effective resistance between X'Y' which are in parallel $\frac{1}{R_1} = \frac{1}{12} + \frac{1}{6} + \frac{1}{3} = \frac{1+2+4}{12} = \frac{7}{12}$ $R_1 = \frac{12}{7}\Omega$ $V = 6V$ $I = 0.4\ A$ Total resistance in circuit = $R = \frac{V}{I} = \frac{6}{0.4}$ $R = \frac{60}{4} = 15\Omega$ $\therefore \quad 2\Omega + \frac{12}{7}\Omega + X = 15$ $X = 11.28$ ohm b) (i) Resistivity – since the Resistivity is a property of a substance hence it remains the same for both the wires. 1/2 (ii) Resistances – As both the wires are of different cross sectional areas, so both wires are considered as different objects. ½ c) Series arrangement is not used for domestic circuits as current to all appliances remain same in spite of different resistance and every appliance cannot be switched on/ off independently. 1	3
35.	The solution with pH 7 is neutral. **Its pH can be increased by adding a small amount of base** like sodium hydroxide. Basic solutions have pH more than 7. Similarly, **pH can be decreased by adding small amount of acid** like hydrochloric acid. Acidic solutions have pH less than 7. (1/2+1/2) (b) The change in colour of litmus from red to blue indicates that **the solution is of basic nature with pH more than 7. (1)** (c) Carbon dioxide can be liberated by reacting sodium carbonate solution with acid like dilute hydrochloric acid. This shows that **the solution is of acidic nature with pH less than 7.(1)** (d) pH will increase upon dilution/ pH is more for dil.HCl (1) (e) Hydrogen gas would evolve , burning candle extinguished with a pop sound (1/2+1/2) OR OR (i) X is washing soda (a)Write the chemical name ,common name, and chemical formula of X.(1/2 mark	5

	each)(1/2+1/2+1/2) (b)Write the equation involved in its preparation from brine.(3 equations -1/2 mark each))(1/2+1/2+1/2) (c)It form a white insoluble precipitate / scum (1 mark) (ii) Cathode: hydrogen (1/2 mark each))(1/2+1/2) Anode: chlorine	
36.	I. Diagram-1 mark Parts- ½ x 4=2 marks II. fragmentation leaf bud multiple fission budding - ½ X 4= 2 marks	5
	End of the Question Paper	