INDIAN SCHOOL MUSCAT

FINAL EXAMINATION

SET B

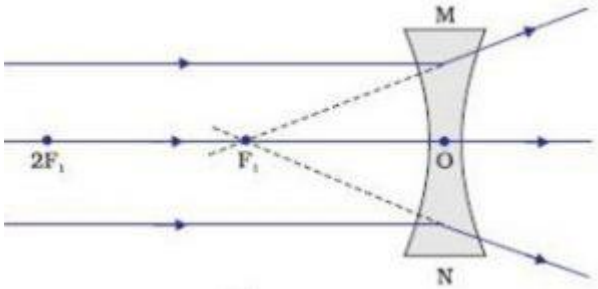
February 2021

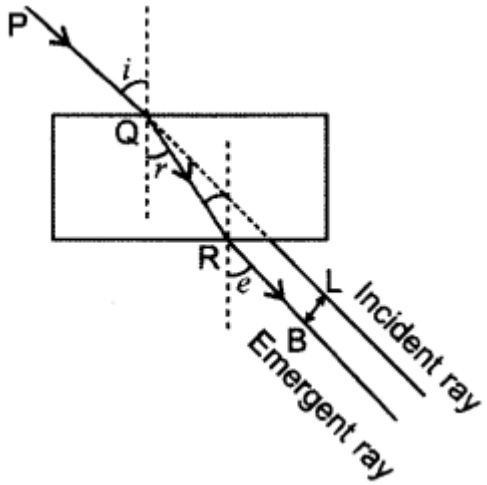
CLASS X

Marking Scheme – SCIENCE

SECTION - A		
Q.NO.	**VALUE POINTS**	
1.	Magnesium & Manganese OR Movement of ion is possible	1
2.	Group no.1 Period no.4	1
3.	(b) $AgNO_3$ solution and Copper metal	1
4.	The sky appears dark to the astronaut as scattering does not take place at very high altitude due to the absence of atmosphere	1
5.	m = -v/u -2 = -v/-10 V = -20 cm	1
6.	Concave mirror, concave lens OR Concave mirror, convex mirror	1
7.	Change in magnetic flux linked with a closed circuit	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.	FISH- single circulation : human – Double circulation	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 (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, less proteins. (½ X2=1 mark)	1
14.	c) A is true, but R is false.	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 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 (½ X2=1 mark) OR For the exchange of materials and diffusion of gases like co2 and o2. (1X2=2 marks).	2
22.	Diaphragm flattens, lifting of the ribs, chest cavity enlarges (any two) (1X2=2 marks).	2
23.	Corrosion (1) Black coating-silver sulphide (1/2+1/2) Green coating-basic copper carbonate Or Carbon dioxide – 1/2mark Lime water test- 1/2 mark Balanced equation-1 mark	2
24.	Each diagram carries 1 mark each	2
25.	Ray diagram of image formed by the concave lens of the distant object .  Nature of image : Virtual ,erect, highly diminished	1+1
26.	Ohm's law : When the physical conditions such as temperature etc. remain same, the current flowing through the conductor is directly proportional to the potential difference applied across the ends of the conductor, Necessary condition for validity of Ohm's law is that physical condition such as temperature of the conductor remains same.	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 With any example of food chain explain- Example -1 mark Explanation-2marks	3
29.	Nephrons (1/2 marks) Glucose, amino acids, salts, water (any three)- ½ x 3=1 ½ marks Urinary bladder is muscular and it is under nervous control (1mark)	3
30.	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
31.	(i)B is the most reactive metal. (ii)B will displace Cu from $CuSO_4$. (iii)B>A>C>D	3
32.	Isomers definition-1mark Two strucures-1/2 mark each Two names- 1/2 mark each	3
33.	Lateral displacement is the perpendicular distance between the incident ray produced and the emergent ray. Lateral displacement in the diagram is BL. The lateral displacement depends on the thickness of the slab, the incident and refraction angles. STATEMENT -2 MARKS  DIAGRAM – 1 MARK	3
	SECTION - D	
34.	a) (i)Current through 2Ω resistor, I1=10v/2Ω=5A , Current through 5Ω resistor, I2=10V/5Ω=2A Current through 10Ω resistor, I3= 10v/10Ω= 1A 1 mark (ii) Total current, I=I1+I2+I3=5A+2A+1A= 8A 1mark (iii) Total resistance in the circuits is given by 1/RP=1/2+1/5+1/10= 5+2+1/10 = 8/10 Rp = 10/8 = 5/4 ohm = 1.25 ohm	5

	1mark b) (i) Resistivity – since the Resistivity is a property of a substance hence it remains the same for both the wires. 1mark (ii) Resistances – As both the wires are of different cross sectional areas, so both wires are considered as different objects. 1 mark OR a) rate of flow of charge ½. Unit ampere ½ b) (i) E = PXT = =400 WX 10 h= 4KWH 1 (ii) E = PXT = 2X 80 W X12 h=1920= 1.92KWH 1 (iii)E =PXT = 6X18 WX 6 h = 684 WH = 0.648 KWH 1 Total energy consumed in one day =4+1.92+0.648=6.568kwh Total energy consumed in one month =6.568X30 = 197.04 kwh ONE UNIT = 3 RS 197.04 X 3 = 591.12 RS 1	
35.	a)(i) The gas 'X' is H_2 and gas 'Y' is Cl_2 (1) (ii) The chemical equation for the reaction is : $2\,NaCl(aq) + 2H_2O(l) \xrightarrow{\text{(Electric current)}} 2NaOH(aq) + H_2(g) + Cl_2(g)$ (X) (Y) (1) (iii) Cl_2 reacts with slaked lime to form bleaching powder. $Ca(OH)_2 + Cl_2$ ————> $CaOCl_2 + H_2O$. (1) (b) Sodium hydrogen carbonate ($NaHCO_3$) is sparingly soluble or less soluble in water and gets separated as a precipitate while NH_4Cl remains in solution. The precipitate is **removed by filtration**. (c) Sodium hydrogen carbonate is converted to sodium carbonate upon heating. $2NaHCO_3 \xrightarrow{\text{heat}} Na_2CO_3 + H_2O + CO_2$ OR (i)definition -1 mark (ii)1/2 mark each for water molecules and formula (iii)colour changes from pale green to white powder (iv) electrolytic decomposition of brine solution results in the formation of an alkali-NaOH and chlorine.(1) Cathode: hydrogen (1/2 mark each) Anode: chlorine	5
36.	I. Diagram-1 mark Parts- ½ x 4=2 marks II. fragmentation leaf bud	5

	multiple fission budding - ½ X 4= 2 marks	
	End of the Question Paper	