INDIAN SCHOOL MUSCAT

FINAL EXAMINATION

SET C

JANUARY 2021

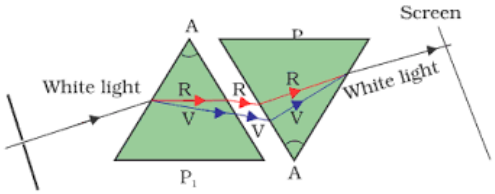
CLASS X

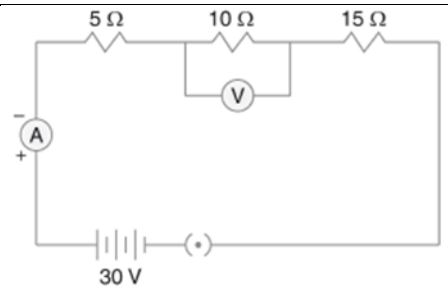
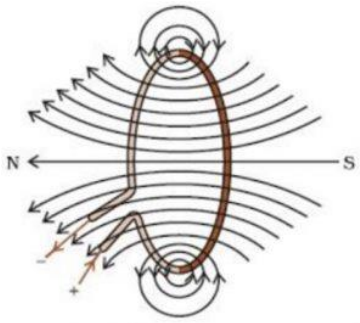
Marking Scheme – SCIENCE

SECTION - A		
Q.NO.	**VALUE POINTS**	
1.	Oxidised- Zn , Reduced- CuO OR $C_6H_{12}O + 6O_2 \rightarrow 6 CO_2 + 6 H_2O$ +heat energy	1
2.	Vanilla, onion. any two	1
3.	Glowing splinter- pop sound	1
4.	The **nature** of this **image** is virtual and erect	1
5.	In outer **space**, the **sky appears dark** instead of blue to an **astronaut** because there **is** no atmosphere containing air in outer **space** to scatter sunlight. Since there **is** no scattered light to reach our eyes in outer **space**, the **sky appears** to be **dark** there.	1
6.	power of lens p = 1/f P = -0.5 D **(OR)** The **object should** be kept in **between** the "C the centre of curvature and the focus F" in **concave mirror**."	1
7.	The **right hand** is held with the thumb, index finger and middle finger mutually perpendicular to each other (at **right** angles), as shown in the diagram. The thumb is pointed in the direction of the motion of the conductor relative to the magnetic field.	1
8.	The **magnetic field** inside of a **current-carrying solenoid** is very uniform in direction and magnitude. Only near the ends does it begin to weaken and change direction.	1
9.	**when** the conductor is **made thinner**, its area of cross-section will decrease, since **resistance** is inversely proportional to the area of the conductor. Therefore, its **resistance** will increase. **(OR)** To **measure the potential difference between two points**, a **voltmeter** should be **connected** in parallel to the **points**	1
10.	Does not allow the collapse of trachea even when there is not much air in it.	1

11.	a) Guard cells b) Heterotrophs OR Viruses do not show movements outside the host cells. They show movements at the molecular level inside the living cells.	1
12.	Since so little energy is available for the next level of consumers. The loss of energy at each step is so great. OR A food chain refers to the order of events in an ecosystem, where one living organism eats another organism and later that organism is consumed by another larger organism.	1
13.	i) Aerobic respiration ii) Anaerobic respiration	1
14.	(d) A is false, but R is true.	1
15.	Option C –A is true but Reason is false	1
16.	Option C –A is true but Reason is false	1
17.	BIOLOGY- CASE BASED QUESTIONS	1x4
	i) c	
	ii) d	
	iii) c	
	iv) c	
	v) d	
18.	CHEMISTRY- CASE BASED QUESTIONS	1x4
	i) Li, Na, K, Rb , Cs	
	ii) Bromine	
	iii) Fluorine	
	iv) Increases	
	v) Ionic	
19.	PHYSICS- CASE BASED QUESTIONS	1x4
	i) D	
	ii) B	

	iii) A	
	iv) D	
	v) B	
20.	PHYSICS- CASE BASED QUESTIONS	1x4
	i) B	
	ii) C	
	iii) B	
	iv) D	
	v) D	
	SECTION - B	
21.	1 Exchange of gases by diffusion process. 1 mark 2. (i) Absorption and upward movement of water (ii) temperature regulation. ½ +1/2 OR 1. Filtration of nitrogenous waste from blood and osmoregulation. ½ +1/2 2. For exchange of materials by diffusion process. 1 mark	2
22.	Quantity of dissolved oxygen is fairly low in water as compared to the amount of oxygen in air. Aquatic organisms therefore have to breathe faster than terrestrial organisms to absorb the required amount of oxygen from the water.	2
23.	Magnesium .Only highly reactive metal can displace less reactive metal. (0.5 + 0.5) $Mg + ZnSO4 \rightarrow MgSO4 + Zn$ (1) OR Those oxides which shows both acidic and basic character.(1) Any one example with equation. (0.5 + 0.5)	2
24.	Definition (1) C3H6 (1)	2
25.	(a) Parallel combination of **3Ω and 6Ω resistors** in series with **2Ω resistor.** **(b) 2Ω, 3Ω and 6Ω are connected in parallel.**	2
26.	The splitting up of white light into seven colours on passing through a transparent medium like a glass prism is called dispersion of light. Cause of dispersion of light: When light passes through a prism, the different frequencies of light travel at different velocities. Because of refraction, the different velocities make the angles of refraction different, causing the light to travel in slightly different directions. (i) the most is violet (ii) the least is red.	2
	SECTION - C	
27.	i) Green plants ii) 25%	3

	iii) 1:2 OR Agree with the statement. ½ M All the variation do not have an equal chance of surviving in the environment in which they find themselves. ½ M The chances of surviving depend on the nature of variation different individuals have different kind of advantages. 1 M A bacteria that can withstand heat will survive better in heat wave. 1 M	
28.	1. Organisms of first trophic are producers. Organisms of second trophic level are herbivores. Producers are autotrophic, i.e., manufacture their own food from inorganic raw materials. Herbivores are animals which feed on producers for obtaining food and its contained energy. 2M 2. Plastics are non-biodegradable substances as they cannot be broken down by decomposers. 1 M	3
29.	1. Blood passes through filtration units in the kidney called nephron ½ M 2. Passes through glomerulus in the Bowman's capsule – Ultra filtration ½ M 3. Reabsorption – Water (as per the need of the body), Glucose and amino acids are all reabsorbed 1 M 4. Secretion of excess water, salts and urea (nitrogenous waste) which makes up the urine 1 M	3
30.	Cu (1) Fe with example(0.5 +0.5) Mn. with example(0.5 +0.5)	3
31.	Reason-(0.5 each) One difference with examples (1.5) Aldehyde-0.5 Carboxylic group-0.5)	3
32.	Definition (1) Any two difference (1) 2 structures (0.5 + 0.5)	3
33.	(a) **Laws of refraction state** that: (1)The incident ray refracted ray, and the normal to the interface of two media at the point of incidence all lie on the same plane. (ii)The ratio of the sine of the angle of incidence to the sine of the angle of **refraction** is a constant. (b)  	3
SECTION - D		

34.	 $R = R_1 + R_2 + R_3 = 30\Omega$ $I = V/R = 30 / 30 = 1A$ V across $10\Omega = IR_2 = 1 \times 10 = 10$ V **(b)** solve for ratio $X : Y = n^2 : 1$ (OR) (a)  (b) (1) Increases (2) Increases	5
35.	Salt-CaSO4.1/2 H2O …as it becomes hard (Gypsum)(1 + 1) CaSO4 .1/2 H2O + 3/2 H2O →CaSO4 + 2H2O (1) Definition (1) Example(1) OR CaOCl2 (0.5) Calcium oxy chloride (0.5) Ca(OH)2 + Cl2 → CaOCl2 + H2O (1) Sodium bicarbonate(1) NH3 + CO2 + H2O + NaCl → NaHCO3 +NH4Cl (1) Any one use (1)	5
36.	1. Oestrogen and Testosterone 1 M 2. Fertilization requires bringing of male gametes to the female gamete which is possible only when pollen grain is brought from the anther to the stigma in the process of pollination. 1 M a. Genetically similar to the parent plant	5

	b. Earlier production. 2 M 3. Formation of ova, Secretion of hormones estrogen and progesterone. 1 M	