NAVODAYA VIDYALAYA SAMITI: HYDERABAD REGION

नवोदय विद्यालय समितिः हैदराबाद क्षेत्र

Term I Examination (2025-26)

CLASS: X **SUBJECT : SCIENCE**

Max Time: 3 hrs. **Max Marks: 80**

SET- I Marking Scheme / सेट-I अंकन योजना

SECTION A

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Select the most appropriate option out of the four choices given for each of the question

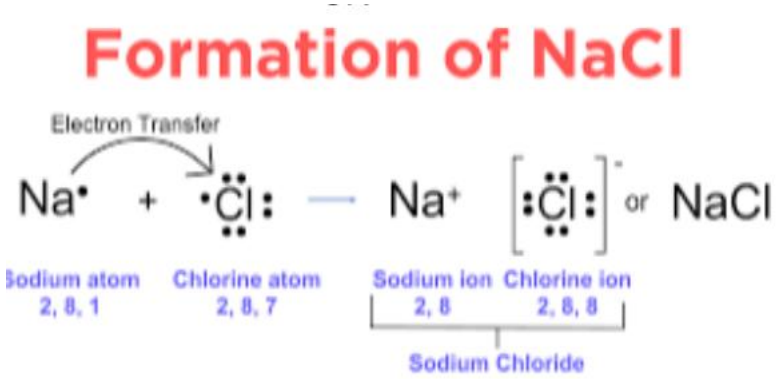
Q.No	Answer Key	Mark Distribution
1	c) Carbon di-oxide , water , oxygen, latex, gum and resins	1
2	b) Closing and opening of lotus flower- growth independent movement.	1
3	d) All the above are correct.	1
4	b) cerebrum	1
5	c) Throughout the alimentary canal	1
6	a) Amphibian	1
7	c) ribs lifted upwards and diaphragm flattened and the thoracic volume increased.	1

8	c) A is true but R is false.	1
9	c) A is true but R is false.	1
10	Muscle cells have special protein cause change in their shape by contraction through the interaction of protein filaments called actins and myosin. Plant cell change their shape by changing the amount of water in them.	1+1 =2
11	Testis. It produces the hormone testosterone it controls spermatogenesis and male secondary sexual characters. **OR** Anterior pituitary (Adenohypophysis) / Pituitary gland. It secretes Growth hormone. It regulates growth and development of the body. Deficiency of the hormone leads to dwarfism and excess secretion cause gigantism.	1+1 =2
12	During any scary situation adrenaline directly release into the blood and it **reaches the target organ** (heart). As a result heart beat faster to **supply more oxygen to muscle reduce the supply to skin and digestive system by contraction of muscle around small arteries**. So the individual can fight or runaway from the situation.	2
13	Placenta is a disc shaped tissue which embedded in the uterine wall by **the inter- digitation of villi on the embryo side and blood spaces on mother side**. It provides **nutrition and oxygen** to embryo and **remove metabolic waste from the embryo**. Placenta also produce hormone which support foetal growth and maintain pregnancy.	3

14	If DNA copying (replication) process is less accurate many of the resultant **DNA copies would not able to work with the cellular apparatus** it inherit and the organism would die. If DNA it is not absolutely accurate many of the resultant **errors bring variation** that **brings evolution**.	1+2 =3
15	Select option A OR B a) **Vasectomy in male**, permanent method of contraception but **irreversible it is safe and long run.** b) **Tubectomy in female**, permanent method of contraception **irreversible** it may cause infection if it not done properly. c) **Condoms "**A" Male condom and "B" Female condom **reversible.** d) **oral pills** since they are hormonal preparation they **change hormonal balance they can cause side effects**. **OR** a) Multiple fission in plasmodium b) Binary fission with orientation in Leishmania c) regeneration in planaria d) Leaf budding in bryophyllum	1+1+1+1 = 4
16	Select option A or B A. Stomach: protein into peptone by pepsin, pH is below 7 acidic mediumdue to HCl Pancreas: Peptone into poly peptide by Trypsin, pH is above 7 alkaline medium due to bile. Small intestine: intestinal juice secreted by wall of small intestine contain erepsin digest polypeptides into amino acid	1 ½ +1 ½ +2 = 5

	pH is above 7 making an alkaline medium. **OR** B. a) Nutritional steps: Ingestion : intake of food inside of the body It involves two steps. Approach of amoeba towards food particles capturing the food by forming pseudopodia. Digestion: break down of complex food into simple food by the help of enzymes Absorption and assimilation: The digested food diffused in the cytoplasm of the cell. Assimilation: Utilisation of digested food for the growth and the development of organism. Egestion: removal of undigested food from the cell body by exocytosis. b) Amoeba capture the food by forming pseudopodia, but in paramecium steered the food into gullet by the help of cilia.	
	SECTION B	
17	B	1
18	C	1
19	A	1
20	B	1
21	D	1
22	C	1

23	C	1
24	D	1
25	A - Sodium, B - Calcium , C - Aluminium, D - Copper	½ X 4 =2
26	a) If Y is sodium the YCl is NaCl which is a neutral salt .So p H will be 7 b) If in salt NH4X, X is nitrate then salt will be NH4NO3 which is acidic salt With universal indicator it shows red colour. c) If Z is potassium in ZCO3 ,then salt will be K2CO3 which is basic salt so colour of blue litmus solution remains unchanged.	3
27	ZnCO 3 → ZnO + CO 2 Decomposition reaction 2 KBr + BaI 2 → 2KI + BaBr 2 Double displacement reaction Cu +2 AgNO 3 → Cu(NO 3) 2 + 2Ag Displacement reaction **OR** The reddish-brown metal is copper, and the black substance formed is copper(II) oxide. The balanced equations are: 2Cu + O2 → 2CuO (for the heating of copper) and CuO + H2 → Cu + H2O (for the reaction with hydrogen)	3
28	a) Rust,Fe_2O_3.x H_2O b) Haemetite Fe_2O_3, Magnetite Fe_3O_4,Siderite $FeCO_3$,Iron sulphide FeS_2 (any two) c) Galvanisation-Iron is coated with Zinc to prevent rusting Painting-Painting protects Iron surface from rusting (Or any other methods) **OR**	4

	Aluminium is good reducing agent .It reacts with Fe_2O_3 to form molten iron which is used to join cracked railway tracks	
29	a)Roasting-ZnS,CuS Calcination-CaCO 3 ,PbCO 3 Difference-Roasting Is heating of sulphide ore in excess of air.Calcination is heating of Ore in limited supply of air. b) $2ZnS(s) + 3O_2(g) \rightarrow 2ZnO(s) + 2SO_2(g)$ $ZnO(s) + C(s) \rightarrow Zn(g) + CO(g)$ $2Cu_2S\ (s) + 3O_2\ (g) \rightarrow 2Cu_2O\ (s) + 2SO_2\ (g)$ $2Cu_2O\ (s) + Cu_2S\ (s) \rightarrow 6Cu\ (l) + SO_2\ (g)$ **OR**  b) It is highly soluble in water and conducts electricity in molten form and aqueous form. c) The extraction of sodium by electrolysis involves the breakdown of molten sodium chloride (NaCl) into its constituent elements, sodium (Na) and chlorine (Cl_2), using an electric current. At the cathode, sodium ions (Na^+) are reduced to sodium metal (Na),	5

	while at the anode, chloride ions (Cl^-) are oxidized to chlorine gas (Cl_2). At the Cathode: Reaction: $Na^+(l) + e^- \rightarrow Na(l)$ At the Anode: Reaction: $2Cl^-(l) \rightarrow Cl_2(g) + 2e^-$	
	SECTION C	
30	B) Concave mirror	1
31	C) Reflection, dispersion and internal reflection	1
32	(A) Both A and R are true and R is the correct explanation of A	1
33	Wire B has a steeper slope in the V-I graph compared to wire A, it indicates that wire B has a higher resistance. Since resistance is directly proportional to resistivity, this means that wire B is made of a material with higher resistivity than wire A.	2
34	Myopia (nearsightedness). 1. Elongation of the eyeball: 2. Excessive curvature of the eye lens or cornea: The sky appears blue due to the scattering of sunlight by atmospheric particles. Blue light, having a shorter wavelength, is scattered more efficiently than other colors, leading to the a blue sky. In space, there is no atmosphere to scatter sunlight. Therefore, without the scattering of light, the space appears dark or black.	1.5 + 1.5 = 3
35	a) Proper diagram b) Virtual, between P and R, diminished c) +v,	1+ 1+1 = 3
36	a) Danger signals are red because red light has the longest wavelength among visible colours, and it scatters the least through air, fog, or dust, making it easily visible from a distance. b) It forms an erect virtual image of the object and forms wider field of view for the driver. c) The path of a beam of light passing through a colloidal	1+1+1 = 3

	solution is visible due to the Tyndall effect, where light is scattered by the small particles in the solution, causing the beam to become visible as it passes.	
37	$h_o = 3cm\,, f = -12cm, u = -18cm$ $\frac{1}{v}+\frac{1}{u}=\frac{1}{f}$ $\frac{1}{v}=\frac{1}{f}-\frac{1}{u}$ 1/2 $\frac{1}{v}=\frac{1}{-12}-\frac{1}{-18}$ 1/2 $v = -36cm$ 1/2 $m=\frac{h_i}{h_o}=-\frac{v}{u}$ 1/2 $h_i=\frac{v}{u}h_o=-\frac{-36}{-18}\times 3=-6cm$ 1	3
38	a) Any two applications 1 b) R = 2f, R = 30cm 1 c) Correct ray diagram 2 **OR** c) u = -100, v = -100 f = -50cm 1 $m=-\frac{v}{u}$ $m=-\left(-\frac{100}{100}\right)=-1$ 1	4
39	i) Mirror A forms a diminished image because u > 2f. 1 (ii) The image in Case 2 is real and inverted. 1 (iii) (A) The image formed by Mirror C is virtual, erect, and magnified. 1 Diagram 2 **OR** (iii) $f = +12cm, \quad u = -18cm$ $\frac{1}{v}+\frac{1}{u}=\frac{1}{f}$ 1/2 $\frac{1}{v}=\frac{1}{f}-\frac{1}{u}$ 1/2 $\frac{1}{v}=\frac{1}{-12}-\frac{1}{-18}$ 1/2	5

	$v = \frac{36}{5} cm = 7.2\ cm$ 1/2	