

Marking Scheme
Strictly Confidential
(For Internal and Restricted use only)
Secondary School Examination, 2026 (Xth)
SUBJECT NAME: Science (Q.P. CODE /Set No. 086/31-4-1)

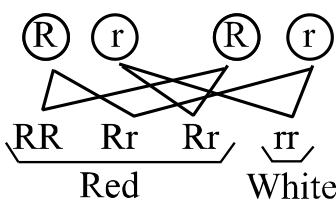
General Instructions :-

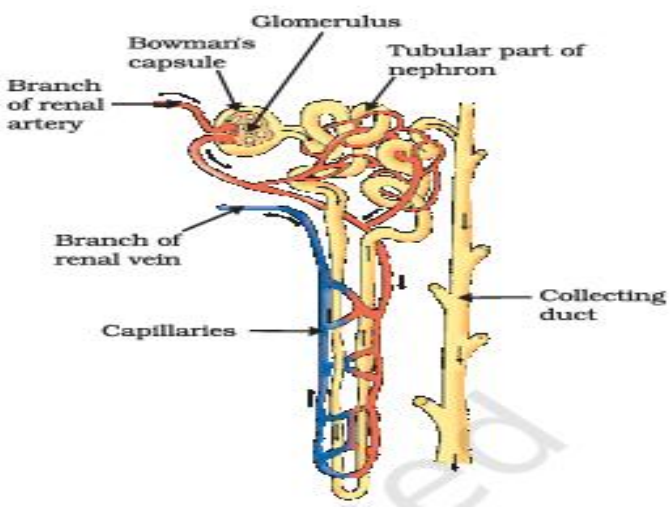
1	You are aware that evaluation is the most important process in the actual and correct assessment of the candidates. A small mistake in evaluation may lead to serious problems which may affect the future of the candidates, education system and teaching profession. To avoid mistakes, it is requested that before starting evaluation, you must read and understand the spot evaluation guidelines carefully.
2	“Evaluation policy is a confidential policy as it is related to the confidentiality of the examinations conducted, evaluation done and several other aspects. Its leakage to public in any manner could lead to derailment of the examination system and affect the life and future of millions of candidates. Sharing this policy/document to anyone, publishing in any magazine and printing in Newspaper/Website, etc. may invite action under various rules of the Board and IPC.”
3	Evaluation is to be done as per instructions provided in the Marking Scheme. It should not be done according to one’s own interpretation or any other consideration. Marking Scheme should be strictly adhered to and religiously followed. However, while evaluating, answers which are based on latest information or knowledge and/or are innovative, they may be assessed for their correctness otherwise and due marks be awarded to them. In Class-X, while evaluating two competency-based questions, please try to understand given answer and even if reply is not from marking scheme but correct competency is enumerated by the candidate, due marks should be awarded.
4	The Marking scheme carries only suggested value points for the answers. These are in the nature of Guidelines only and do not constitute the complete answer. The students can have their own expression and if the expression is correct, the due marks should be awarded accordingly.
5	The Head-Examiner must go through the first five answer books evaluated by each evaluator on the first day, to ensure that evaluation has been carried out as per the instructions given in the Marking Scheme. If there is any variation, the same should be zero after deliberation and discussion. The remaining answer books meant for evaluation shall be given only after ensuring that there is no significant variation in the marking of individual evaluators.
6	Evaluators will mark (✓) wherever answer is correct. For wrong answer CROSS ‘X’ be marked. Evaluators will not put right (✓) while evaluating which gives an impression that answer is correct and no marks are awarded. This is most common mistake which evaluators are committing.
7	If a question has parts, please award marks on the right-hand side for each part. Marks awarded for different parts of the question should then be totalled up and written in the left-hand margin and encircled. This may be followed strictly.
8	If a question does not have any parts, marks must be awarded in the left-hand margin and encircled. This may also be followed strictly.
9	If a student has attempted an extra question, answer of the question deserving more marks should be retained and the other answer scored out with a note “Extra Question” .

10	No marks to be deducted for the cumulative effect of an error. It should be penalized only once.
11	A full scale of marks 80 (example 0 to 80/70/60/50/40/30 marks as given in Question Paper) has to be used. Please do not hesitate to award full marks if the answer deserves it.
12	Every examiner has to necessarily do evaluation work for full working hours i.e., 8 hours every day and evaluate 20 answer books per day in main subjects and 25 answer books per day in other subjects (Details are given in Spot Guidelines). This is in view of the reduced syllabus and number of questions in question paper.
13	Ensure that you do not make the following common types of errors committed by the Examiner in the past: • Leaving answer or part thereof unassessed in an answer book. • Giving more marks for an answer than assigned to it. • Wrong totalling of marks awarded on an answer. • Wrong transfer of marks from the inside pages of the answer book to the title page. • Wrong question wise totalling on the title page. • Wrong totalling of marks of the two columns on the title page. • Wrong grand total. • Marks in words and figures not tallying/not same. • Wrong transfer of marks from the answer book to online award list. • Answers marked as correct, but marks not awarded. (Ensure that the right tick mark is correctly and clearly indicated. It should merely be a line. Same is with the X for incorrect answer.) • Half or a part of answer marked correct and the rest as wrong, but no marks awarded.
14	While evaluating the answer books if the answer is found to be totally incorrect, it should be marked as cross (X) and awarded zero (0) Marks.
15	Any unassessed portion, non-carrying over of marks to the title page, or totalling error detected by the candidate shall damage the prestige of all the personnel engaged in the evaluation work as also of the Board. Hence, in order to uphold the prestige of all concerned, it is again reiterated that the instructions be followed meticulously and judiciously.
16	The Examiners should acquaint themselves with the guidelines given in the “ Guidelines for Spot Evaluation ” before starting the actual evaluation.
17	Every Examiner shall also ensure that all the answers are evaluated, marks carried over to the title page, correctly totalled and written in figures and words.
18	The candidates are entitled to obtain photocopy of the Answer Book on request on payment of the prescribed processing fee. All Examiners/Additional Head Examiners/Head Examiners are once again reminded that they must ensure that evaluation is carried out strictly as per value points for each answer as given in the Marking Scheme.

MARKING SCHEME
SCIENCE (Subject Code-086)
(PAPER CODE: 31/4/1) (10-04-86K)

Q.No.	EXPECTED OUTCOMES/VALUE POINTS	Marks	Total Marks
	SECTION – A BIOLOGY		
1.	(C) / By breaking down the nutrients of bread outside the body and then absorbing them.	1	1
2.	(C) / Formation of fruit.	1	1
3.	(B) / (iv)	1	1
4.	(B) / (i) and (iv)	1	1
5.	(A) / (i), (ii) and (iii)	1	1
6.	(B) / (i) and (iv)	1	1
7.	(D) / Contraction of Left Ventricle.	1	1
8.	(C) / Assertion (A) is true but Reason (R) is false.	1	1
9.	(A) / Both Assertion(A) and Reason(R) are true, and Reason (R) is correct explanation of Assertion(A).	1	1
10.	- Necessary- It helps in transport of water and minerals from roots to leaves/ helps in temperature regulation. - Evil- It results in loss of water.	1 1	2
11.	- Only 10% of the energy from one trophic level is transferred to the next level. Most of the energy is lost as heat. - So very little usable energy will remain after four trophic levels./ $\begin{array}{ccccc} \text{Grass} & \xrightarrow{10\%} & \text{Grasshopper} & \xrightarrow{10\%} & \text{Frog} \\ \text{(Producer)} & & \text{(Primary consumer)} & & \text{(Secondary consumer)} \\ \text{(1000k Cal.)} & & \text{(100k Cal.)} & & \text{(10k Cal.)} \end{array}$ (Any other suitable food chain)	1 1	2
12	(A) - As his pancreatic duct is blocked, enzymes for digestion will not be transported to small intestine / The blockage will cause difficulty in digestion of proteins, carbohydrates and fats. - Insulin secretion is already affected. OR (B) - Reflex action - An automatic and quick response to a stimulus which does not involve thinking.	1 1 ½ ½	

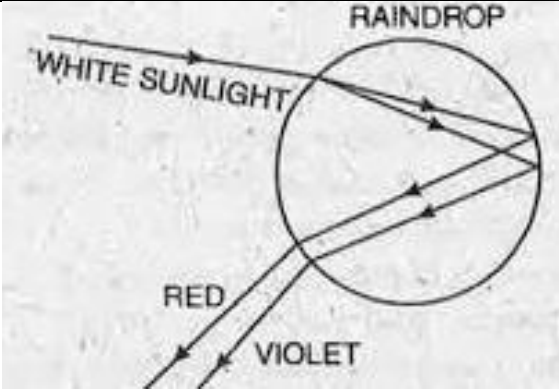
	Stimulus → Receptor → sensory neuron → relay neuron (spinal cord) → Motor neuron → effector (muscle) response.	1	2
13.	(a) Because adrenal gland secretes adrenaline hormone that enables the animal body to face a scary situation. (b) To prevent female foeticide. (c) Plants raised by vegetative propagation can bear flowers and fruits earlier than those produced from seeds / Such methods also make possible the propagation of plants such as banana, orange, rose and jasmine that have lost the capacity to produce seeds / All plants produced are genetically similar enough to the parent plant to have all its characteristics.	1 1 1	3
14.	(a) Parents : $RR \times rr$ (Red flowers) (White flowers) Gametes : $\textcircled{R} \textcircled{r}$ $F_1: Rr \times Rr$ (All red) Gametes: $\textcircled{R} \textcircled{r} \textcircled{R} \textcircled{r}$ F_2  (b) Phenotypic ratio/ Showing external look of plants : 33 : 11 3 : 1 (Red) (White) Genotypic Ratio : 1 : 2 : 1 RR : Rr : rr	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	3
15.	(a) Due to hydrotropism, the roots grow towards area of water availability so that they can absorb water and minerals. (b) Auxins promote cell elongation / Auxin regulates the tropic responses like bending (growth) of stem towards light.	1 1	

	(B) (a)  Diagram Labelling of any 4 parts (b) Filtration of blood to remove wastes. (c) It is a process by which useful substances like glucose, amino acids, vitamins, salts and most of water are reabsorbed from filtrate, back into the blood.	1 $\frac{1}{2} \times 4$ 1 1	5
SECTION – B Chemistry			
17.	(B)/ 2 : 1	1	1
18.	(C)/ Exothermic Reaction	1	1
19.	(B)/ Hydrochloric acid	1	1
20.	(A)/ The hydrophobic tail of the soap molecule is in the interior of the cluster, whereas hydrophilic end is on the surface of the cluster.	1	1
21.	(D)/ Magnesium	1	1
22.	(D)/ Steel	1	1
23.	(A)/ By adding acid to water with constant stirring.	1	1
24.	(A)/ Both A and R is true and R is correct explanation of A.	1	1
25.	(a) A → Sodium hydrogen carbonate/ baking soda/ NaHCO_3 B → Sodium carbonate/ washing soda/ Na_2CO_3	$\frac{1}{2}$ $\frac{1}{2}$	

	(b)	• $\text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O}$ • 373K / 100°C	$\frac{1}{2}$	$\frac{1}{2}$	2
26.	(a)	Decomposition of silver chloride (AgCl) to form silver (Ag) $2\text{AgCl(s)} \xrightarrow{\text{Sunlight}} 2\text{Ag(s)} + \text{Cl}_2\text{(g)}$	1		
	(b)	Decomposition of lead nitrate releases NO_2 / Nitrogen dioxide $\text{2Pb(NO}_3)_2\text{(s)} \xrightarrow{\text{Heat}} \text{2PbO(s)} + \text{4NO}_2\text{(g)} + \text{O}_2\text{(g)}$ [Lead nitrate] [Lead oxide] (Nitrogen dioxide) (Oxygen)	1		
	(c)	To prevent the oxidation of fats in food items.	1		3
27.	(A)				
	(i)	(a) Carbonate ore: Calcination $\text{ZnCO}_3\text{(s)} \xrightarrow{\text{Heat}} \text{ZnO(s)} + \text{CO}_2\text{(g)}$	$\frac{1}{2}$		
		(b) Sulphide ore : Roasting $2\text{ZnS(s)} + 3\text{O}_2\text{(g)} \xrightarrow{\text{Heat}} 2\text{ZnO(s)} + 2\text{SO}_2\text{(g)}$	$\frac{1}{2}$		
	(ii)	$\text{Fe}_2\text{O}_3\text{(s)} + 2\text{Al(s)} \rightarrow 2\text{Fe(l)} + \text{Al}_2\text{O}_3\text{(s)} + \text{Heat}$	1		
	(iii)	• Anode: Impure copper rod. • Cathode: Pure copper strip. OR	$\frac{1}{2}$	$\frac{1}{2}$	
	(B)				
	(i)	$2\text{ZnS(s)} + 3\text{O}_2\text{(g)} \xrightarrow{\text{Heat}} 2\text{ZnO(s)} + 2\text{SO}_2\text{(g)}$ $\text{ZnO(s)} + \text{C(s)} \rightarrow \text{Zn(s)} + \text{CO(g)}$	1	1	
	(ii)	Nitric acid is a strong oxidising agent and oxidises H_2 gas produced to water.	1		3
28.	(a)	Universal indicator	1		
	(b)	A/ (pH = 3)	1		
	(c)	• Strong acids give more H^+ ions in water. / Strong acids pH 1-2 • Weak acids give less H^+ ions in water. / Weak acids pH 6-7	1	1	

	OR		
	(c) (i) When pH<5.6 (ii) Weak acid: acetic acid, formic acid	1 $\frac{1}{2}+\frac{1}{2}$	4
29.	(A) (i) Carbon cannot form C^{4+} cation because removal of four electrons is energetically not possible. Carbon cannot form C^{4-} anion because nucleus with six protons cannot hold ten electrons. (ii) - A series of compounds in which the same functional group substitutes for hydrogen in carbon chain is called a homologous series. - Because of higher molecular mass of C_4H_{10} than C_3H_8 or C_2H_6. (iii) Ethanoic acid / acetic acid / CH_3COOH is formed / $CH_3-CH_2OH \xrightarrow{\text{acidified } K_2Cr_2O_7 + \text{Heat}} CH_3COOH$ OR (B) (i) I. Propanal II. Propyne (ii) I. Ester group II. $CH_3 - COOH + CH_3 - CH_2OH \xrightarrow{\text{Acid}} CH_3 - \underset{\text{O}}{\underset{ }{C}} - O - CH_2 - CH_3 + H_2O$ (iii) Soaps reacts with calcium and magnesium salts present in hard water to form scum (insoluble substance).	2 1 1 1 1 1 1 1 1	5
SECTION – C Physics			
30.	(A) / Iris and pupil	1	1
31.	(C) / Presbyopia	1	1
32.	(A) / Both Assertion (A) and Reason (R) both are true, and Reason (R) is the correct explanation of Assertion	1	1
33.	(A) $I = \frac{P}{V}$ $I = \frac{2000}{200}$	$\frac{1}{2}$	

	$I = 10 \text{ A}$ - Current passing through electric heater is 10A which is much more than rated value (4A) of fuse. Hence fuse will melt and break the circuit. So, it cannot be used. OR (B) - An electromagnet is formed by wrapping a current carrying insulated copper wire in the form of coil around a magnetic material like soft iron core. / By placing a magnetic material like soft iron as a core material inside the current carrying solenoid. - Strength of electromagnet can be increased by increasing the (i) Number of turns of coil (ii) Current flowing through the coil.	$\frac{1}{2}$ 1 1 $\frac{1}{2}$ $\frac{1}{2}$	2
34.	(a) 1 Volt is the potential difference between two points in a current carrying conductor when one Joule work is done to move a charge of 1Coulomb from one point to the other. / $1\text{V} = \frac{1\text{J}}{1\text{C}}$ (b) $V = \frac{W}{Q}$ $W = Q \times V$ $W = 1.6 \times 10^{-19} \times 100$ $W = 1.6 \times 10^{-17} \text{ J}$	1 $\frac{1}{2}$ $\frac{1}{2}$	2
35.	(a) (i) Speed of light in medium A > Speed of light in medium B. (ii) Media B and C both have same optical density. (b)	$\frac{1}{2}$ $\frac{1}{2}$ 2	3
36.	Rainbow is caused by dispersion of sunlight by tiny water droplets, present in the atmosphere. The water droplets act like small prisms. They refract and disperse the incident sunlight, then reflect it internally, and finally refract it again when it comes out of the raindrop.	2	

		1	3
37.	(a) - The rod AB gets displaced from its original position - Because it experiences a force when placed in external magnetic field (b) - Fleming's Left Hand Rule - Stretch the thumb, fore finger and middle finger of your left hand such that they are mutually perpendicular. If forefinger points in the direction of magnetic field, second finger in the direction of current, then the thumb will point in the direction of motion or force acting on the conductor.	$\frac{1}{2}$ $\frac{1}{2}$ 1 1	3
38.	(a) Real / magnified. (b) Converging / Concave mirror, Plane mirror (c) - Convex lens - It magnifies the image formed by the curved mirror OR (c) The plane mirror redirects/ reflects the light rays coming from the curved mirror towards eyepiece.	1 1 1 1 2	4

39.	(A) Let I be the total current flowing through the circuit and I_1 and I_2 be the currents flowing through 4Ω (R) and R_2 resistors. (i) (I) Potential difference across R_2 is same as that of across 4Ω resistor as they are connected in parallel. $\therefore V \text{ (across } R_2) = I_1 R$ $= 1.5 \times 4$ $= 6V$ (II) Current flowing through $I_2 = I - I_1$ $= 2.0 - 1.5 = 0.5 \text{ A}$ $R_2 = \frac{V}{I_2}$ $R_2 = \frac{6}{0.5}$ $R_2 = 12 \Omega$ (III) Potential difference across 2Ω resistor $V = I R$ $V = 2 \times 2 = 4V$ Potential difference across $R_1 = 12 - (6 + 4) = 2V$ $R_1 = \frac{V}{I}$ $R_1 = \frac{2}{2} \Rightarrow R_1 = 1 \Omega$ (ii) Resistance of conductor depends on - Length of the conductor / $R \propto l$ - Area of cross section / $R \propto \frac{1}{A}$ $R \propto l$ $R \propto \frac{1}{A}$ $R \propto \frac{l}{A}$ $R = \rho \frac{l}{A}$ Where ρ = Resistivity (a proportionality constant)	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 1	
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