

Marking Scheme
Strictly Confidential
(For Internal and Restricted use only)
Secondary School Examination, 2026 (Xth)
SUBJECT NAME : Science (Q.P. CODE /Set No. 086/31-4-3)

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 totaled 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” .

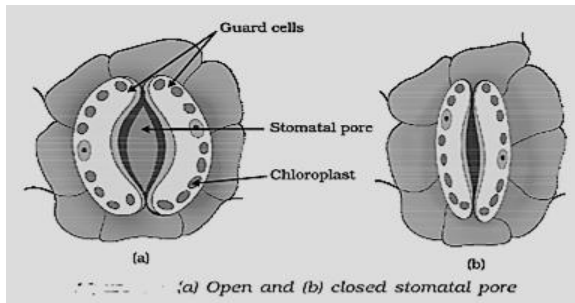
10	No marks to be deducted for the cumulative effect of an error. It should be penalized only once.
11	A full scale of marks 80 (example 0 to 80/70/60/50/40/30 marks as given in Question Paper) has to be used. Please do not hesitate to award full marks if the answer deserves it.
12	Every examiner has 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 totaling 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 totaling on the title page. • Wrong totaling 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 totaling 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 totaled 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.

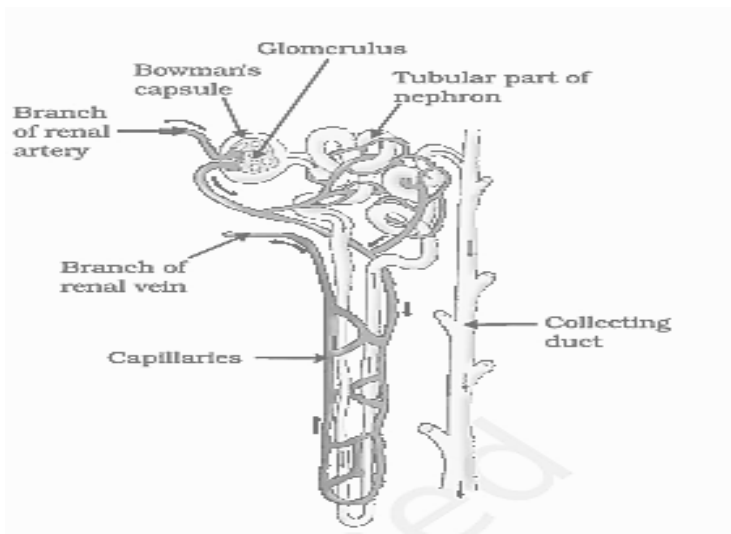
MARKING SCHEME
SCIENCE (Subject Code-086)
(PAPER CODE : 31/4/3) (10-04-86K)

Q.No.	EXPECTED OUTCOMES/VALUE POINTS	Marks	Total Marks
	SECTION – A Biology		
1.	(B) / (iv)	1	1
2.	(C) / By breaking down the nutrients of bread outside the body and then absorbing them.	1	1
3.	(C) / Formation of fruit	1	1
4.	(D) / Mammals	1	1
5.	(D) / Organic substance from leaves to the other parts of the plant.	1	1
6.	(D) / Contraction of Left Ventricle.	1	1
7.	(B) / (i) and (iv)	1	1
8.	(A) / Both Assertion (A) and Reason(R) are true and Reason(R) is correct explanation of Assertion (A).	1	1
9.	(C) / Assertion(A) is true, but Reason(R) is false.	1	1
10.	• Decomposers are organisms that break down dead and decaying organic matter into simpler inorganic substances. • Roles: ➤ Environment clean up ➤ Nutrient recycling (or any other relevant point)	1 ½ ½	2
11.	• Food: ▪ P – Glucose ▪ Q – Starch • Raw materials: CO₂, H₂O • Conditions: Presence of sunlight, chlorophyll	½ ½ ½ ½	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. • Stimulus → Receptor → sensory neuron → relay neuron (spinal cord) → Motor neuron → effector (muscle) response.	1 1 ½ ½ 1	2

13.	(a) Parents: TTPP X ttp tall purple short white Gametes: TP tp ↓ F₁ TtPp Selfing of F₁ TtPp × TtPp F₂ <table><tr><td>gametes</td><td>TP</td><td>Tp</td><td>tP</td><td>tp</td></tr><tr><td>TP</td><td>TTPP</td><td>TTPp</td><td>TtPP</td><td>TtPp</td></tr><tr><td>Tp</td><td>TTPp</td><td>TTpp</td><td>TtPp</td><td>Ttpp</td></tr><tr><td>tP</td><td>TtPP</td><td>TtPp</td><td>ttPP</td><td>ttPp</td></tr><tr><td>tp</td><td>TtPp</td><td>Ttpp</td><td>ttPp</td><td>ttpp</td></tr></table> tall and purple : 9 tall and white : 3 short and purple : 3 short and white : 1 (b) In F₂ progeny probability of Tall, White = 3/16	gametes	TP	Tp	tP	tp	TP	TTPP	TTPp	TtPP	TtPp	Tp	TTPp	TTpp	TtPp	Ttpp	tP	TtPP	TtPp	ttPP	ttPp	tp	TtPp	Ttpp	ttPp	ttpp	1
gametes	TP	Tp	tP	tp																							
TP	TTPP	TTPp	TtPP	TtPp																							
Tp	TTPp	TTpp	TtPp	Ttpp																							
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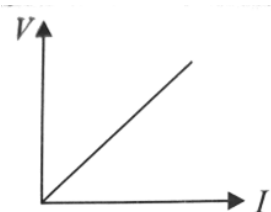
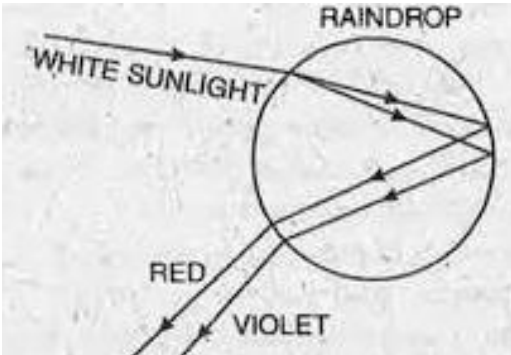
15.	(a) Due to hydrotropism, the roots grow towards area of water availability so that they can absorb water and minerals. (b) Auxins promote cell elongation / Auxin regulates the tropic responses like bending (growth) of stem towards light. (c)<table><tr><th>Movement by sensitive plants</th><th>Tropic Movements by plants</th></tr><tr><td>Non-directional</td><td>Directional</td></tr><tr><td>Fast</td><td>Slow</td></tr><tr><td>Growth independent movement</td><td>Growth related</td></tr></table> (Any two points and any other difference) OR (c)<table><tr><th>Movement of Roots</th><th>Movement of Shoots</th></tr><tr><td>Gravity: Grows towards gravity / Positive geotropism</td><td>Gravity: Grows away from gravity / Negative geotropism</td></tr><tr><td>Light: Grows away from light / Negative phototropism</td><td>Light: Grows towards light/ Positive phototropism</td></tr></table>	Movement by sensitive plants	Tropic Movements by plants	Non-directional	Directional	Fast	Slow	Growth independent movement	Growth related	Movement of Roots	Movement of Shoots	Gravity: Grows towards gravity / Positive geotropism	Gravity: Grows away from gravity / Negative geotropism	Light: Grows away from light / Negative phototropism	Light: Grows towards light/ Positive phototropism	1	
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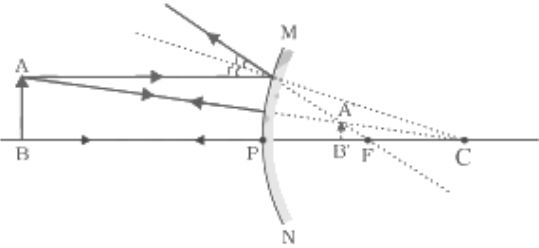
16.	(A) (a)  (b) - Absorption of light energy by chlorophyll. - Conversion of light energy to chemical energy and splitting of water molecule into hydrogen and oxygen. - Reduction of carbon dioxide to carbohydrates (c) 6CO₂ + 12H₂O Chlorophyll Sunlight → C₆H₁₂O₆ + 6O₂ + 6H₂O (Glucose) OR	1 + 1	
		2	
		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 ½ x 4 1 1	5
	SECTION – B		
	Chemistry		
17.	(B)/ Hydrochloric acid	1	1
18.	(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
19.	(D)/ Magnesium	1	1
20.	(C)/ Exothermic Reaction	1	1
21.	(B)/ 2 : 1	1	1
22.	(C)/ Lead and Tin	1	1
23.	(B)/ Sodium Hydrogen Carbonate	1	1
24.	(A)/ Both A and R is true and R is correct explanation of A.	1	1
25.	(a) $2\text{NaCl(aq)} + 2\text{H}_2\text{O(l)} \rightarrow 2\text{NaOH(aq)} + \text{Cl}_2\text{(g)} + \text{H}_2\text{(g)}$ (b) $2\text{NaHCO}_3 \xrightarrow{\text{Heat}} \text{Na}_2\text{CO}_3 + \text{H}_2\text{O} + \text{CO}_2$ (Deduct ½ mark for no/ incorrect balancing)	1 1	2

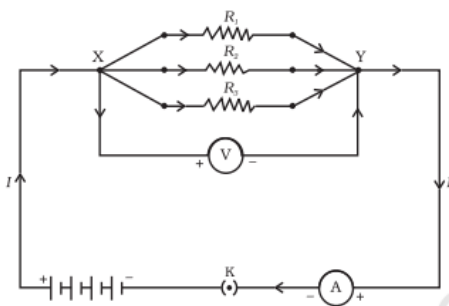
26.	(A) (i) (a) Carbonate ore: Calcination $\text{ZnCO}_3(\text{s}) \xrightarrow{\text{Heat}} \text{ZnO}(\text{s}) + \text{CO}_2(\text{g})$ (b) Sulphide ore: Roasting $2\text{ZnS}(\text{s}) + 3\text{O}_2(\text{g}) \xrightarrow{\text{Heat}} 2\text{ZnO}(\text{s}) + 2\text{SO}_2(\text{g})$ (ii) $\text{Fe}_2\text{O}_3(\text{s}) + 2\text{Al}(\text{s}) \rightarrow 2\text{Fe}(\text{l}) + \text{Al}_2\text{O}_3(\text{s}) + \text{Heat}$ (iii) - Anode: Impure copper rod. - Cathode: Pure copper strip. OR (B) (i) $2\text{ZnS}(\text{s}) + 3\text{O}_2(\text{g}) \xrightarrow{\text{Heat}} 2\text{ZnO}(\text{s}) + 2\text{SO}_2(\text{g})$ $\text{ZnO}(\text{s}) + \text{C}(\text{s}) \rightarrow \text{Zn}(\text{s}) + \text{CO}(\text{g})$ (ii) Nitric acid is a strong oxidising agent and oxidises H₂ gas produced to water.	½ ½ 1 ½ ½ 1 1 1	3
27.	(a) - Green colour of the crystal changes brown. - Colourless gases with odour of burning sulphur. (any other observation) (b) Copper changes to copper (II) oxide which is black in colour./ $\underset{\text{Brown}}{2\text{Cu}(\text{s})} + \text{O}_2(\text{g}) \xrightarrow{\text{Heat}} \underset{\substack{\text{Copper(II) Oxide} \\ \text{(Black)}}}{2\text{CuO}(\text{s})}$ (Award full marks if chemical equation with colour changes is written) (c) Calcium oxide (quick lime) and colourless gas (CO₂) is evolved) / $\text{CaCO}_3(\text{s}) \xrightarrow{\text{Heat}} \text{CaO}(\text{s}) + \text{CO}_2(\text{g})$	½ ½ 1 1	3

28.	(a) Universal indicator (b) A/ (pH = 3) (c) - Strong acids give more H⁺ ions in water. - Weak acids give less H⁺ ions in water. OR (c) (i) When pH < 5.6 (ii) Weak acid: acetic acid, formic acid	1 1 1 1 1 $\frac{1}{2} + \frac{1}{2}$	4
29.	(A) (i) Carbon cannot form C⁴⁺ cation because removal of four electrons is energetically not possible. Carbon cannot form C⁴⁻ 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 C₄H₁₀ than C₃H₈ or C₂H₆. (iii) Ethanoic acid / acetic acid / CH₃COOH is formed / $\text{CH}_3 - \text{CH}_2\text{OH} \xrightarrow[\text{Or acidified K}_2\text{Cr}_2\text{O}_7 + \text{Heat}]{\text{Alkaline KMnO}_4 + \text{Heat}} \text{CH}_3\text{COOH}$ OR (B) (i) I. Propanal II. Propyne (ii) I. Ester group II. $\text{CH}_3 - \text{COOH} + \text{CH}_3 - \text{CH}_2\text{OH} \xrightarrow{\text{Acid}} \text{CH}_3 - \underset{\text{O}}{\underset{\parallel}{\text{C}}} - \text{O} - \text{CH}_2 - \text{CH}_3 + \text{H}_2\text{O}$ (iii) Soaps reacts with calcium and magnesium salts present in hard water to form scum (insoluble substance).	2 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) $I = \frac{P}{V}$ $I = \frac{2000}{200}$ $I = 10 \text{ A}$ - 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.	$\frac{1}{2}$ $\frac{1}{2}$ 1 1 $\frac{1}{2}$ $\frac{1}{2}$	2
34.	(i) The potential difference, V, across the ends of a given metallic wire in an electric circuit is directly proportional to the current, I flowing through it, provided its temperature remains the same (ii) 	1 1	2
35.	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

36.	(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
37.	(a) $f = + 2\text{m}$ $u = - 8\text{m}$ $\frac{1}{v} + \frac{1}{u} = \frac{1}{f}$ $\frac{1}{v} = \frac{1}{f} - \frac{1}{u}$ $\frac{1}{v} = \frac{1}{2} + \frac{1}{8}$ $v = \frac{8}{5} = 1.6 \text{ m}$ The image is formed 1.6m behind the mirror (b) 	$\frac{1}{2}$ $\frac{1}{2}$ 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) (i)



As in parallel combination, potential difference applied across each resistor is same. Current flowing through each resistor R_1 , R_2 and R_3 is

$$I_1 = \frac{V}{R_1}, I_2 = \frac{V}{R_2}, I_3 = \frac{V}{R_3}$$

If resistance of parallel combination is R_p , then current drawn from battery is

$$I = \frac{V}{R_p}$$

$$\text{Current, } I = I_1 + I_2 + I_3$$

$$\frac{V}{R_p} = \frac{V}{R_1} + \frac{V}{R_2} + \frac{V}{R_3}$$

$$\frac{1}{R_p} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$$

(ii) As all the resistors are connected in parallel, the potential difference applied across each resistor is 12V

$$V = IR$$

$$I_1 = \frac{V}{R_1} = \frac{12}{2} = 6A$$

$$I_2 = \frac{12}{4} = 3A$$

$$I_3 = \frac{12}{6} = 2A$$

OR

(B)

(i) Resistivity is the resistance offered by a wire of unit length and unit area of cross section in an electric circuit.

(ii)

- Resistivity of conducting wire will remain same.
- Resistivity is the characteristic property of the material.
- Resistance will remain same

1

$\frac{1}{2}$

$\frac{1}{2}$

1

$\frac{1}{2}$

$\frac{1}{2}$

$\frac{1}{2}$

$\frac{1}{2}$

5

1

$\frac{1}{2}$

$\frac{1}{2}$

$\frac{1}{2}$

	$R = \rho \frac{l}{A}$ If $l' = 2l$ $A' = 2A$ $R' = \rho \frac{l'}{A'}$ $R' = \rho \frac{2l}{2A}$ $R' = R$ (iii) $H = I^2 R t$ $I = \sqrt{\frac{H}{R t}}$ $I = \sqrt{\frac{100}{4 \times 1}}$ $I = 5A$	$\frac{1}{2}$ 1 1	5
	- o O o -		