Marking Scheme Strictly Confidential (For Internal and Restricted use only) Secondary School Certificate Examination, 2025 SUBJECT : SCIENCE (086) (Q.P. CODE 31/4/2)

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Gene	eral 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 guestion 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 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 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.

SECONDARY SCHOOL EXAMINATION, 2025 MARKING SCHEME CLASS: X SCIENCE (Subject Code–086) [Paper Code:31/4/2]

	Maximum Marks: 80				
Q. No.	EXPECTED ANSWERS / VALUE POINTS	Marks	Total Marks		
	SECTION A				
1	(c)/ 40cm	1	1		
2	(c) /100%; 75%	1	1		
3	(c)/ seeds	1	1		
4	(d)/ Melting of glaciers	1	1		
5	(b)/ ductility	1	1		
6	(a)/ Calcium chloride	1	1		
7	(d)/ Propyne	1	1		
8	(d)/ Both, male and female germ cells.	1	1		
9	(b)/ Nitrogen	1	1		
10	(b)/ B and D	1	1		
11	(c)/ DDT	1	1		
12	(c)/ plants - \rightarrow man	1	1		
13	(c)/ glass slab	1	1		
14	(d)/ 9	1	1		
15	(c)/ 60	1	1		
16	(a)/ 4400 Ω	1	1		
17	(d) / Assertion (A) is false but Reason (R) is true.	1	1		
18	(d) / Assertion (A) is false but Reason (R) is true.	1	1		
19	(d) / Assertion (A) is false but Reason (R) is true.	1	1		
20	 (a) // Both Assertion and Reason are true and Reason (R) is the correct explanation of Assertion (A). 	1	1		



	• Convex lens is thickened at the middle as compared to edges	1	
	• to facilitate the near vision. <i>(either of I or II)</i>	1/2	2
23	The inner lining of the small intestine has numerous finger-like projections called villi, which increases the surface area for absorption of digested food; The villi are richly supplied with blood vessels; which transport the absorbed food to each and every cell of the body.	2	2
24	(i)All tall		
	• Tallness is a dominant trait	$\frac{1}{2}$ $\frac{1}{2}$	
	(ii) 1 : 1	1	2
25	(A) $Mg \stackrel{\times \times \times}{\stackrel{\times}{\stackrel{\times}{\stackrel{\times}{\stackrel{\times}{\stackrel{\times}{\stackrel{\times}{$	1	2
	 Cation - magnesium ion / (Mg²⁺) Anion - chloride ion / (Cl⁻) 	1/2 1/2	
	OR		
	(B)		
	(i) If Zinc is in the form of sulphide ore.Roasting	1/2	
	$2ZnS + 3O_2 \xrightarrow{\text{Heat}} 2ZnO + 2SO_2$	1/2 1/2	
	- Reduction $ZnO + C \xrightarrow{Heat} Zn + CO$	1/2	
	OR		
	(ii) If Zinc is in the form of carbonate ore.		

	Calcination	1/2	
	$ZnCO_3 \xrightarrow{Heat} ZnO + CO_2$	1/2	
	- Reduction	1/2	
	$ZnO + C \xrightarrow{Heat} Zn + CO$	1/2	2
	(either i or ii)		
26	• An electric fuse is a safety device used to prevent any damage to an	1	
	electrical appliance due to short-circuiting and overloading of the		
	electrical circuit.		
	• If a fuse wire with defined rating is replaced by one with a larger		
	rating, then the fuse wire will not melt and the electrical appliance		
	will be damaged due to flow of unduly high current during short-	1	2
	circuiting and overloading.		
	SECTION C		[
27	• Decomposers are the microorganisms which breakdown the complex	1	
	organic substances into simple inorganic substances.		
	• Examples: bacteria and fungi	1/2+1/2	
	The simple substances formed by decomposition go into the soil and are	1	
	used up once more by the plants, thus maintain balance of an ecosystem.	1	3
28	(i) Metal D		
20	(ii) Blue colour of copper sulphate will disappear.		
	(iii) $B > C > A > D$	1x3	3
29	(i)		
	A: pulmonary artery		
	B: pulmonary vein	½ x4	
	C: aorta		
	D: vena cava		
	(ii)		
	• Function of A: Carries deoxygenated blood from heart to lungs	14	
	 Function of C: Transports oxygenated blood from heart to all parts of 	72 XZ	
	the body.		3
20	(i)		5
30	• A - Insulator	1/2	
	B - Allov	1/2	
	C - Conductor	1/2	
	(ii)		

	• A: Plastic - handle of an electric iron.		
	• B: Nichrome – used as a heating element in an electric iron.		
	• C: Copper - electric wires.		
	/		
	A: Rubber– foot of the electric stove.		
	B: Nichrome – used as a heating element in an electric stove.		
	C: Copper- electric wires.		
	(any other example with its use in an electric appliance)	(½x3)	2
			3
31	• Object should be placed between C and F / between 18cm to 36 cm	1	
	from the mirror.		
	• Mirror formula $=$ $\frac{1}{1} + \frac{1}{1} = \frac{1}{1}$		
	v u f	1/2	
	• Magnification m = -2		
	f = -18 cm	1	
	$m = -\frac{v}{u} = -2$	1	
	$\therefore v = 2u$		
	•		
	$\frac{1}{2u} + \frac{1}{u} = \frac{1}{18 \text{ cm}}$		
	2u u -10 cm		
	$\therefore \frac{3}{2} = \frac{1}{2}$		
	2u –18 cm		
	u = -27 cm	1⁄2	3
32	(A)		
54	• The number of atoms of each element remains same before and		
	after a chemical reaction / to satisfy the law of conservation of	1/2	
	mass.		
	• Law of conservation of mass.	1/2	
	• Mass can neither be created nor destroyed in a chemical	1	
	reaction.		
	• $3Zn + 2H_3PO_4 \longrightarrow Zn_3(PO_4)_2 + 3H_2$	1	
	a -		
	OR		

	(B)		
	• Any reaction in which a precipitate (insoluble substance) is formed is called a precipitation reaction.	1	
	• Example: when sodium sulphate solution is added to the barium		
	chloride solution a white precipitate of barium sulphate is formed.	1	
	• Na ₂ SO ₄ (aq)+ BaCl ₂ (aq) \longrightarrow BaSO ₄ (s)+ 2NaCl(aq) ppt	1	3
	(any other example)		
33	Limitations of electrical impulse:		
	• They reach only those cells that are connected by nervous tissue, and not every cell in the animal body.	1	
	• Once an electrical impulse is generated in a cell and transmitted, the		
	cell will take some time to reset its mechanism before it can generate	1	
	and transmit a new impulse. / Takes sometime to reset its mechanism.		
	(any other limitation)		
	• In chemical communication the signals (chemical compound)		
	potentially reach all cells of the body steadily and persistently	1	
	providing the desired changes.		
			3
	SECTION D		
	SECTION D	n	
34	(A) (i)		
34	 (A) (i) Structural isomers: compounds with identical molecular formula but different structures. 	1	
34	(A) (i) • Structural isomers: compounds with identical molecular formula but different structures. • $H = H = H = H = H = H = H = H = H = H $	1	
34	(A) (i) • Structural isomers: compounds with identical molecular formula but different structures. • $ \begin{array}{c} H & H & H & H \\ H & -C & -C & -C & -H \\ H & H & H & H \\ H & H & H & H \\ \end{array} $ • Reason: In propane there are three carbon atoms whose branching is not possible. / Two different skeletal or structures are not possible.	1 1/2 +1/2 1	
34	(A) (i) • Structural isomers: compounds with identical molecular formula but different structures. • $ \begin{array}{c} H & H & H & H & H & H & H & H & H & H &$	$ \begin{array}{c} 1 \\ \frac{1}{2} + \frac{1}{2} \\ 1 \\ \frac{1}{2} \\ \frac{1}{2} \end{array} $	



	(ii) (a)		
	• red wire : Live wire		
	• black wire : Neutral wire	¹ / ₂ x3	
	• green wire : Earth wire		
	(b) 220 V	1/2	
	(c) This is used as a safety measure. It ensures that any leakage of the current to the metallic body of the appliance keeps its potential to that of the earth and the user may not get a severe electric shock.	1	
	OR		
	(B)(i)		
	(a) The conductor AB gets displaced.	1	
	(b)		
	- By reversing the direction of the current.	1+1	
	- By reversing the direction of the magnetic field.		
	(ii)When the direction of current is at right angles to the direction of the magnetic field.	1	
	(iii)Stretch the thumb, fore finger and middle finger of your left hand such that they are mutually perpendicular. If the first finger points in the direction of magnetic field and the second finger in the direction of the current, then the thumb will point in the direction of the force acting on the conductor.	1	5
6	(A) (i)		
	• Regeneration: The ability to give rise to new individual organism		
	from their body parts / If the individual is somehow cut or broken up	1	
	into many pieces, then each piece grows into a new organism.		
	Organism show regeneration: <i>Planaria /Hydra</i>	1/2	
	Organism does not show regeneration: <i>Spirogyra</i>	1/2	
	(any other example)		
	• Because it does not have specialised cells which proliferate to make		
	new cells type and tissues.		
	(ii)		
	• Spirogyra.	1/2	
	• It reproduces through Fragmentation.	1/2	

	• It simply breaks up into smaller pieces upon maturation. The	1	
	pieces grow into new individuals.		
	OR		
	(B)(i)		
	(a) vas deferens		
	(b) testes		
	(c) prostate gland/ seminal vesicles		
	(d) scrotum		
	(ii) Consists of genetic material, has a tail for movement, small in size.	¹ / ₂ x4	
	(any two)	$\frac{1}{2} \times 2$	
	(iii)	/ 2/12	
	• Vas deferens in the males and fallopian tube in females is blocked to		
	prevent fertilization.	¹ / ₂ x2	
	• Can cause infections if not performed properly.	1	~
	SECTION E	1	5
27	(i) A rainbow (or any other)	1	
57	(ii) Dispersion of white light takes place.	1	
	(iii) (A)		
	• The presence of water droplets in the atmosphere.	1.1	
	• The sun must be at the back of the observer.	1+1	
	OR		
	(iii) (B)		
	Paindron		
	Ranarop		
	Sunagra	¹ ⁄ ₂ x4	
	$(\frac{1}{2})$ mark for diagram and $\frac{1}{2}$ for labelling a b c)		4
	(i) Hydraehlaric acid/HCl and Sadium hydravida / NaOU	$\frac{1}{2} + \frac{1}{2}$	4
38	(ii) -Neutral	1/	
1		72	1

	- as it is a salt of strong acid and strong base.	1/2	
	(iii) (A)		
	• Aqueous solution of sodium chloride (brine) decomposes		
	(electrolysed) and produces:	1/2	
	NaOH solution near cathode		
	• Cl ₂ at anode		
	• H ₂ at cathode	¹ / ₂ x3	
	OR		
	(iii) (B)		
	Washing soda is obtained from sodium chloride by following reactions:		
	• $NaCl + H_2O + CO_2 + NH_3 \longrightarrow NH_4Cl + NaHCO_3$		
	• $2NaHCO_3 \xrightarrow{Heat} Na_2CO_3 + H_2O + CO_2$		
	• Recrystallisation of sodium carbonate gives washing soda.		
	• $Na_2CO_3 + 10H_2O \longrightarrow Na_2CO_3 .10H_2O$	½ x 4	
			4
39	(1) Reflex action.	1/2	
	• The sudden action in response to stimuli in the environment.	1/2	
	(a) Motor neuron $-$ carries message from spinal cord to the effector	1/2	
	organ/muscle		
	(b) Relay neuron – Connects sensory neuron to motor neuron.	1.4	
		1/2	
	(iii)		
	(A) -Central Nervous system.		
	Components: Brain; spinal cord ,		
	-Peripheral Nervous system.	$\frac{1}{2} \times 4$	
	Components: cranial nerves ; spinal nerves.	, 2	
	OR		
	(iii)(B)		
	(a) Fore-brain/Cerebrum		
	(b) Cerebellum / Hind-brain		
	(c) Medulla/ Hind-brain	½ x4	
	(d) Fore-brain		4