Strictly Confidential: (For Internal and Restricted use only)
Secondary School Term II Compartment Examination, 2022
Marking Scheme – SCIENCE (SUBJECT CODE 086)
(PAPER CODE – 31/6/1)

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 News Paper/Website etc may invite action under 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 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, marks should be awarded.**
4. 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. 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.
5. Evaluators will mark(√) wherever answer is correct. For wrong answer 'X" be marked. Evaluators will not put right kind of mark while evaluating which gives an impression that answer is correct and no marks are awarded. **This is most common mistake which evaluators are committing.**
6. 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.
7. 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.
8. If a student has attempted an extra question, answer of the question deserving more marks should be retained and the other answer scored out.
9. No marks to be deducted for the cumulative effect of an error. It should be penalized only once.
10. A full scale of marks 40 (example 0-40 marks as given in Question Paper) has to be used. Please do not hesitate to award full marks if the answer deserves it.
11. Every examiner has to necessarily do evaluation work for full working hours i.e. 8 hours every day and evaluate 30 answer books per day in main subjects and 35 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.

12. 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 a reply.
    - 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.
    - 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.

13. 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.

14. 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.

15. The Examiners should acquaint themselves with the guidelines given in the Guidelines for spot Evaluation before starting the actual evaluation.

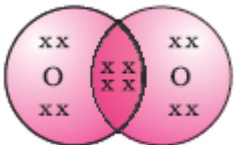
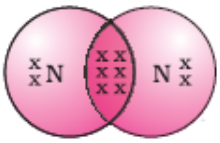
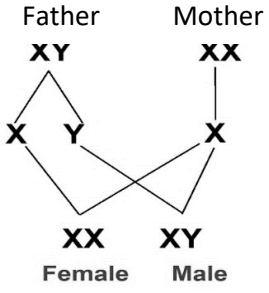
16. Every Examiner shall also ensure that all the answers are evaluated, marks carried over to the title page, correctly totaled and written in figures and words.

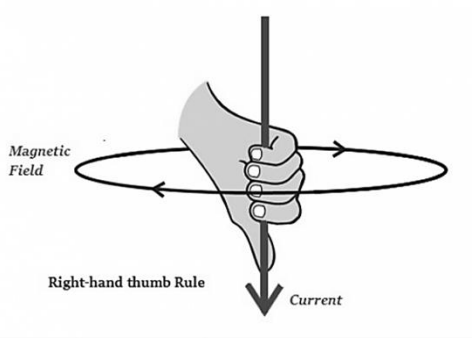
17. The Board permits candidates to obtain photocopy of the Answer Book on request in an RTI application and also separately as a part of the re-evaluation process on payment of the processing charges.

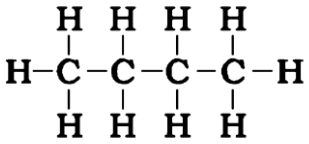
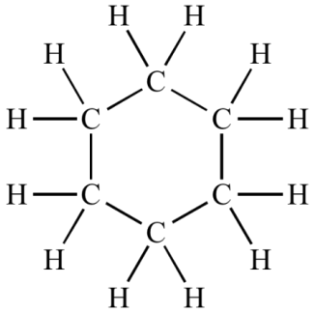
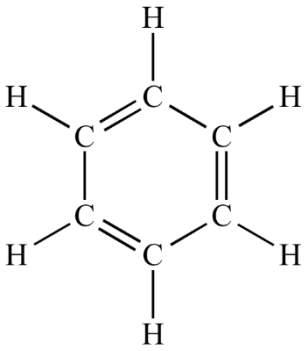
MARKING SCHEME
Secondary School Term II Compartment Examination, 2022
SCIENCE (Subject Code–086)
[Paper Code :31/6/1]

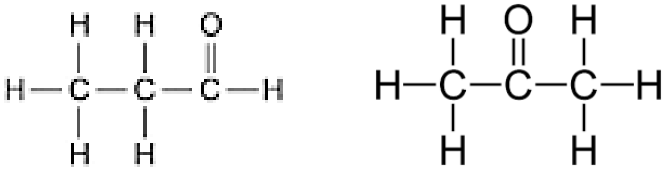
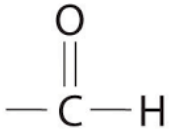
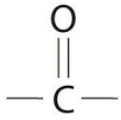
Maximum Marks: 40

Instructions: -
- **The marking scheme carries only suggested value points for the answers.**
- **These are only guidelines and do not constitute the complete answer.**
- **The students can have their own expression and if the expression is correct, the marks are awarded accordingly.**

Q. No.	EXPECTED ANSWER / VALUE POINTS	Marks	Total Marks
	SECTION—A		
1.	(a)  (b) 	1 1	2
2.	(a) F<N<Be<Li (b) • Electronic configuration of 'X' is 2,8,3 so valency is 3 /valency is 3 • XCl_3	1 ½ ½	2
3.	Sexually reproducing organisms produce germ cells / gametes in reproductive organs which have half the number of chromosomes. When these germ cells / gametes fuse, the number of chromosomes is restored / re-established.	1 1	2
4.	• A: Pollen grain • B: Male germ cell • C: Female germ cell • Function of B: It fuses with the female germ cell to form zygote.	½ ½ ½ ½	2
5.	(a) • Mother produces gametes having only X chromosomes whereas father produces two types of gametes - one having X chromosomes and the other having Y chromosomes. So, when the gametes fuse to form zygote, 50% will be male (XY) and 50% will be female (XX).  (Credit full marks if explained by diagram only) **OR**	1 1	

	(b) Tt X tt tall short ↓ Tt Tt tt tt tall tall short short Ratio: Tall : Short :: 1 : 1 Tt : tt :: 1 : 1	½ ½ 1	2
6.	(a) (i) • The deflection will increase. • It indicates that the magnitude of the magnetic field produced at a given point increases as the current through the wire increases. (ii) If a current carrying conductor is imagined to be held in right hand such that the thumb points along the direction of current then the direction of the wrapped fingers will give the direction of magnetic field lines. (Give full credit if explained by labelled figure)  **OR** (b) • Two factors (i) Strength of current (ii) Distance of the point from the straight conductor • Imagine that you are holding a current carrying straight conductor in your right hand such that the thumb points towards the direction of the current then your fingers will wrap around the conductor in the direction of magnetic lines.	½ ½ 1 ½ ½ 1	2
7.	(a) (i) Because all the biotic as well as abiotic components are created / controlled by human beings. (ii) Plants→ Insect → Frog → Snake (Or any other) **OR** (b) (i) Only biodegradable wastes are decomposed into simpler substances and non-biodegradable can be recycled. (ii) To atmosphere • Ozone layer depletion To mankind • Damage to eyes/ skin cancer in human beings.	1 1 1 ½ ½	2

	SECTION B		
8	(a) Dobereiner stated that when three elements in a triad are arranged in the order of increasing atomic masses, the atomic mass of the middle element was roughly the average of the atomic masses of the other two elements.	1	
	(b) It was not useful because it could identify only three triads of elements from the elements known at that time.	1	
	(c) (i) X – Group 3 / Group III	½	
	(ii) Y – Group 2 / Group II / Group 6 / Group VI	½	3
9	(a) (i) (I) oxygen / O	½	
	(II) alcohol / - OH	½	
	(ii) 	½	
	(iii) (I) 	½	
	(II) 	½	
	• Benzene is unsaturated	½	

	OR (b) (i) (I)  (II) Functional Group  / Aldehyde / - CHO  / Ketone (Give marks if only name of the functional group is given) (ii) Due to strong covalent bonds between carbon atoms.	½ + ½ ½ ½ 1	3
10	• Vegetative Propagation : Is a method in which parts of plants like root, stem or leaves develop into new plants. • Layering, grafting (Or any other) • Advantages: - Plants raised can bear flowers and fruits earlier than those produced from seeds. - Plants that have lost the capacity to produce seeds can grow into new plants. - Plants produced are genetically similar to the parent plant. (Any two)	1 ½ + ½ ½ + ½	3
11	(a) (i) (I) $\frac{R_A}{R_B} = \frac{\rho \cdot \left(\frac{L}{A}\right)}{\rho \cdot \left(\frac{L}{4A}\right)}$ $= 4$ (II) $\frac{R_A}{R_C} = \frac{\rho \cdot \left(\frac{L}{A}\right)}{\rho \cdot \left(\frac{L}{2}\right) / \left(\frac{A}{2}\right)}$ $= 1$ (ii) • C • The resistivity of alloys is generally higher than that of the pure metals.	½ ½ ½ ½ ½ ½	

	OR (b) (i) (I) $R_s = R_1 + R_2 + R_3$ (II) $\frac{1}{R_p} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ (ii) Graph (I) Reason : The resistance for the series combination is more than that of parallel combination and it is directly proportional to slope of V-I graph. As in the graph (I), slope of R_s is greater than R_p, hence graph I is correct.	 ½ ½ 1 1	3
12	• Rate at which electrical energy is dissipated / consumed in an electric circuit. • Power P = VI $= \frac{V^2}{R}$ $(I = V/R)$ • $P = \frac{V^2}{R} = \frac{(200\ V)^2}{400\ \Omega} = 100\ \Omega$	1 ½ ½ 1	3
13	(a) Decomposers decompose dead plants and animals and recycle the nutrients. (b) The energy captured by autotrophs does not revert back to solar system. It passes from one level to the next trophic level and does not come back to the previous trophic level. (c) The loss of energy at each step is so high that very little usable energy remains after four trophic levels.	1 1 1	3
	SECTION C		
14	(a) Round and yellow. (b) Wrinkled and yellow ; round and green (c) (i) • In presence of dominant trait recessive trait does not express. Traits are inherited independently. • Round,yellow : Round, green : Wrinkled, yellow : Wrinkled, green 9 : 3 : 3 : 1 **OR** (ii) (I) Dominant trait -The trait which can express itself even in the presence of recessive trait. (II) Recessive trait - Trait which cannot express itself in the presence of dominant trait.	½ + ½ ½ + ½ ½+½ 1 1 1	4
15	(a) (i) Needle of the galvanometer deflects in one direction momentarily (ii) Needle of the galvanometer deflects in opposite to previous direction momentarily.	½ ½	

	(b) The process by which a change in magnetic field in a conductor induce a current in another conductor.	1	
	(c) (i) Reason – Induced current is generated due to change in the magnetic field associated with conductor.	2	
	OR		
	(ii) (I) Deflection in the galvanometer. (II) No deflection	½ ½	
	Reason : (I) Motion of the magnet causes change in the magnetic field associated with coil which gives induced current.	½	
	(II) No change in magnetic field associated with coil and hence no induced current.	½	
			4