Marking Scheme

SUMMATIVE ASSESSMENT – I (2014-15)

Science (Class–X)

General Instructions:

1. The Marking Scheme provides general guidelines to reduce subjectivity and maintain uniformity. The answers given in the marking scheme are the best suggested answers.

2. Marking be done as per the instructions provided in the marking scheme. (It should not be done according to one's own interpretation or any other consideration).

3. Alternative methods be accepted. Proportional marks be awarded.

4. If a question is attempted twice and the candidate has not crossed any answer, only first attempt be evaluated and 'EXTRA' be written with the second attempt.

5. In case where no answers are given or answers are found wrong in this Marking Scheme, correct answers may be found and used for valuation purpose.

भाग–अ / SECTION-A

1		1
2	ohm Ω	1
3	A large no. of solar cells combined in an arrangement that can deliver energy, electricity for practical use.	1
4	Iron is more reactive than copper, zinc is more reactive than iron, copper is more reactive than silver. So, Zn > Fe > Cu > Ag	2

5

$$NaCl + H_2O + CO_2 + NH_3 \rightarrow \underset{\text{Ammonium Chloride}}{NH_4Cl} + \underset{\text{Sodium hydrogen carbonate}}{NaHCO_3}$$

2

6

	Plants	Animal
(i)	No specific or specialized tissue present for conduction of information	Specialised tissues are present in the body for conduction of information
(ii)	Plant cells change shape by changing the amount of water in them	Specialised proteins found in muscle cells that help in changing shape

2

7

(i) $Ca_{(s)} + 2H_2O_{(l)} \rightarrow Ca(OH)_{2\,(aq)} + H_{2\,g}$

Calcium; Water (cold); Calcium hydroxide; Hydrogen

(ii) $3Fe_{(s)} + 4H_2O_{(g)} \rightarrow Fe_3O_{4\,(s)} + 4H_{2\,(g)}$

Iron; Steam; Iron II, III oxide; Hydrogen

(iii) $2ZnS_{(s)} + 3O_{2\,(g)} \rightarrow 2ZnO_{(s)} + 2SO_{2\,(g)}$

Zinc sulphide; oxygen; Zinc oxide; Sulphur dioxide

3

	8	(i) Dry HCl gas does not contain any hydrogen ions, when hydrogen chloride gas dissolves in water it forms H^+ ions, and conduct electricity. (ii) Alcohol and glucose when dissolved in water do not dissociate into H^+ ions, so do not conduct electricity. (iii) On dilution acid dissociates more to produce more H^+ ions.	3
	9	(a) (i) CuO is reduced to copper Hydrogen is oxidised to water (ii) CuO is reduced to copper Zinc is oxidised to zinc oxide (b) To obtain pure metals from their ores by electrolytic reduction. E.g Sodium, aluminium.	3
	10	(i) To prevent the potato chips from becoming rancid. (ii) Due to corrosion of metal. (iii) To present oxidation.	3
	11	(a) Diabetes, insulin, pancreas (b) Pituitary gland, Dwarfism, gigantism	3
	12	Fig. 6.6 Page 92 correct Labellings.	3

	13	(1) Receptor organs like skin receives the stimulus and activates a sensory nerve impulse. (2) Sensory impulse to spinal cord. (3) The neurons of spinal cord transmit the sensory nerve impulse to motor neuron. (4) Motor nerve conducts these impulses to the effectors like muscles which respond accordingly.	3
	14	Electromagnetic induction. Activity	3
	15	Wearing of insulation in old load wires. Using fuse of higher rating. Over loading.	3
	16	$np = VI$ $n = \frac{VI}{p} = \frac{220 \times 5}{40} = \frac{110}{4} = 27.5$ $\therefore$ 27 lamps	3
	17	(i) No, car pooling (ii) By using alternative sources of energy like solar cell panel, wind mill etc. Students are promoting environmental concern, sharing, helpfulness. (any two)	3

	18	• Amount of heat released on burning • easy availability • easy to store and transport • does not produce smoke. Any three	3
	19	(i) Distilled water does not conduct electricity because it does not contain any ionic compound like acids, bases or salts dissolved in it. (ii) When we overeat excess of acid is produced in the stomach which causes burning sensation. (iii) Copper vessels tarnish due to formation of basic copper carbonate. Which gets neutralized when rubbed with lemon and the copper vessel regains its shine. (iv) Washing soda is sodium carbonate decahydrate which when exposed to air loses 10 molecules of water and changes to white powder. (v) Sodium chloride is a salt of strong acid HCl and strong base NaOH so it is neutral. Sodium carbonate is a salt of weak acid H_2CO_3 and strong base NaOH so it is basic.	5
	20	(a) The reaction of calcium with water is less violent. The heat evolved is not sufficient for hydrogen gas evolved to catch fire. (b) (i) Magnesium or manganese (ii) Lead, Copper, silver or gold (iii) A*l*, Fe or zinc	5

21	(a) (i) Starch (ii) ATP. (b) Nutrition in paramecium. 6. 2. 3 Nutrition in amoeba – 6. 2. 3 Fig 6.5		5
22	A current carrying conductor experiences a magnetic force due to a magnetic field. The force is maximum where the conductor is placed perpendicular to the direction of magnetic field. For experiment refer Activity 13.7 Fig 13.12 page 230 NCERT Text book. Effect of change in direction of current : Direction of force is also reversed., Fleming's left hand rule, Effect of change in direction of magnetic field : Direction of deflection is reversed. Statement of Fleming's left hand rule		5
23	● Listing of three factors ● Definition of resistivity and derivation of its unit ● $R = \rho \frac{l}{\pi r^2} \Rightarrow \rho = \frac{R \pi r^2}{l}$ $= \frac{5\ \Omega \times 3.14 \times (0.02 \times 10^{-2})^2\ m^2}{1\ m}$ $= 62.8 \times 10^{-8}\ \Omega m$		5
24	(a) When soft iron bar is placed inside a solenoid carrying current, it becomes a magnet as long as current flows through the solenoid. Such temporary magnets are called electromagnets. (b) 13.2.4 Figure 13.11 Page 229 NCERT book		5

		(c) The field lines inside the solenoid are in the form of parallel straight lines, that is the field is uniform inside the solenoid.	
		भाग–ब / SECTION - B	
	25	(b)	1
	26	(c)	1
	27	(c)	1
	28	(d) II only	1
	29	(d) the lower end of the test-tube becomes slightly warm.	1
	30	(c)	1

	31	**c**	1
	32	(a) A	1
	33	(d)	1
	34	combination reaction - Calcium oxide decomposition reaction – Ferrous sulphate double decomposition reaction – Barium chloride and sodium sulphate.	2
	35	$R = \frac{V}{I}, \frac{180}{18} = 10\ \Omega$	2
	36	In preparing temporary mount of a leaf peel safranine stain is preferred to use and extra stain on this slide is removed by soaking with blotting paper	2

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