**SUMMATIVE ASSESSMENT – I**

**SCIENCE**

**Class – X**

 **Time allowed: 3 hours**

 **General Instructions :**

i). The question paper comprises of two sections, A and B. You are to attempt both the sections.

 ii). All questions are compulsory.

 iii). There is no overall choice. However, internal choice has been provided in all the five questions of five marks category. Only one option in such questions is to be attempted.

iv). All questions to section A and all questions of section B are to be attempted separately.

v). Questions 1 to 4 in section A are one mark questions. These are to be answered in one word or one sentence. vi). Questions 5 to 13 in section A are two marks questions. These are to be answered in about 30 words each. vii). Questions 14 to 22 in section A are three marks questions. These are to be answered in about 50 words each. viii). Questions 23 to 25 in section A are five marks questions. These are to be answered in about 70 words each. ix). Questions 26 to 41 in section B are multiple choice questions based on practical skills. Each question is a one mark question. You are to select one most appropriate response out of the four provided to you.

Section A

1. Give an example of a metal which is the best conductor of heat.
2. Name the agent which decomposes animal dung into biogas
3. Name the physical quantity whose unit is volt/ampere.
4. “All ores are minerals but all mineral are not ores”. Justify the statement with examples.
5. A white powder is added while baking breads and cakes to make them soft and fluffy. What is the name of the powder? What are the main ingredients in it ? What are the functions of each ingredient?
6. A light sensitive compound „X‟ of silver is used in black and white photography. On exposure to sunlight its colour changes to gray :

(a) Identify „X‟

 (b) Write a chemical equation to express the above change

(c) Identify the type of chemical reaction.

1. A white compound on heating decomposes to give brown fumes and a yellow residue is left behind. Name the compound. Write the chemical equation of the reaction stating its type.
2. Name the material transported by the following :-

(i) Xylem (ii) pulmonary artery (iii) pulmonary Vein (iv) phloem

1. Mention the main use of the slurry left behind in the bio-gas of plant. State the characteristics of the slurry on which this use is based.
2. Define 1 kWh. How is this unit of energy related to 1 joule?
3. An electron enters a magnetic field at right angles to it, as shown



What will be the direction of force acting on the electron ? State the rule used to find the direction of this force.

1. Calculate the resistance of a wire, when a potential difference of 2 V is maintained for 1A
2. A brown substance „X‟ on heating in air forms a substance „Y‟. When hydrogen gas is passed over heated „Y‟, it again changes back into „X‟.
3. Name the substance X and Y.
4. (ii) Name the type of chemical reactions occurring during both the changes.
5. (iii) Write the chemical equations of the reactions.
6. The products obtained on electrolysis of concentrated aqueous solution of a substance „X‟ are NaOH, Cl2 and H2.

(a) Name the substance „X‟.

(b) What is the special name of this process and why ?

(c) Which gas is liberated at anode ? (d) List one commercial use of NaOH.

1. (a) Equal lengths of Mg ribbon are taken in test tubes A and B. Hydrochloric acid is added to test tube A. While acetic acid is added to test tube B. In which case the reaction would occur more vigorously and why ? Write the chemical equations for reactions in test tube A and B.

(b) Fresh milk has a pH of 6. How will the pH change as it turns into curd ? Give reason for

1. Define hormones. Name the hormone secreted by thyroid. Write its function.
2. What is reflex arc ? Draw diagram of reflex arc. Label on it the following :
3. List any three limitations in harnessing wind energy.
4. The following circuit diagram shows the combination of three resistors R1, R2 and R3. Find (i) total resistance of the circuit, (ii) total current (I) flowing in the circuit and the (iii) potential difference across R1.
5. Two identical immersion heaters are to be used to heat water, in a large container. Which one of the following arrangement would heat the water faster :
6. connecting the heaters in series with the main supply,
7. connecting the heaters in parallel with the main supply ? Give reasons for your answer.
8. With the help of a diagram describe an experiment to show that a change in current flowing through a coil induces an electric current in a neighbouring coil.
9. (a) The reaction of metal *X* with ferric oxide is highly exothermic. Metal *X* is obtained from its oxides by electrolytic reduction. Identify *X* and write its reaction with ferric oxide.

(b) Give reason to justify that aluminium oxide is an amphoteric oxide. Also give another example of amphoteric oxide.

(c) Mention constituent metals present in bronze.

1. (a) Explain with an example how the metal ***X*** which is low in reactivity series and metal ***Y*** which is high in the reactivity series are obtained from their compounds by reduction process.

 (b) Write the electronic configurations of sodium and chlorine. Show the formation of sodium chloride from sodium and chlorine by the transfer of electrons.

(c) List any two observations when a highly reactive metal is dropped in water.

1. (a) Draw a labelled diagram of sectional view of human heart.

(b) Describe double circulation in human beings. Why is it necessary ?

OR

(a) Draw a diagram of excretory system in human beings and label the following

 (i) left kidney (ii) vena cava (iii) urinary bladder (iv) urethra

(b) Write two major components of human urine.

1. (a) State Flemings left hand rule with a labelled diagram.

 (b) A coil of insulated copper wire is connected to a galvanometer. What happens if a bar magnet is

(i) pushed into the coil ,

(ii) withdrawn from inside the coil ,

1. held stationary inside the coil ?

OR

(a) When do we state that an electrical appliance is earthed ? Mention the function of earth wire in electric lines. Why is it necessary to earth the electric appliances having metallic body ?

(b) Explain what is short circuiting and overloading in an electric supply.

Section B

1. Solid sodium bicarbonate was placed on a strip of pH paper. The colour of the strip :

(a) turned blue (b) did not change (c) turned green and suddenly yellow (d) turned light pink

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1. Four students performed the reactions of dil hydrochloric acid and a solution of sodium hydroxide with zinc metal and solid sodium carbonate separately. They reported the possible reaction by () and no reaction by (X). In which of the following sets all observations are correct?
2. Reddish brown deposit observed on iron nails, when these are kept in aqueous solution of CuSO4 , is that of (a) Cu2O (b) CuO (c) Cu (d) CuS
3. (i) Parallel combination of resistors R1 and R2 and that of R3, R4 and R5 are connected to a battery of 12 V, an ammeter and plug key as shown in the circuit diagram. If R110 ,R240 , R330 , R420 , and R560 calculate : (a) The total resistance in the circuit. (b) The total current flowing in the circuit.
4. Using the following measuring instruments, the best pair made for carrying out experiment to determine resistance of a resistor of nearly 30 is : Milliammeter (A1) : Range 0 - 100 mA, Least count 20 mA. Milliammeter (A2) : Range 0 - 500 mA, Least count 5 mA. Voltmeter (V1) : Range 0 - 3 V and Least count 0.05 V. Voltmeter (V2) : Range 0 - 2 V, and Least count 0.04 V. (a) A1 and V1 (b) A1 and V2 (c) A2 and V2 (d) A2 and V1
5. In a milliammeter, there are 20 divisions between 400 mA mark and 500 mA mark. The least count of the milliammeter is. (a) 0.5 mA (b) 5 mA (c) 10 mA (d) 50 mA.
6. Which of the following devices would you use to maintain potential difference between two points of a conductor ? (a) A rheostat (b) A cell (c) A voltmeter (d) An ammeter
7. In the experiment on finding the equivalent resistance of two resistors connected in parallel three students connected the voltmeter in their circuits in three different ways X, Y and Z shown here :

The voltmeter has been correctly connected in (a) cases X and Y only (b) cases Y and Z only (c) cases Z and X only (d) all the three cases

1. The only correct statement for the two circuits (X) and (Y) shown below is :



(a) The resistors R1 and R2 have been connected in series in both the circuits.

(b) The resistors R1 and R2 have been connected in parallels in both the circuits. (c) In the circuit (X) the resistors R1 and R2 are connected in parallel whereas these are connected in series in circuit (Y) (d) In the circuit (X) the resistors R1 and R2 are connected in series whereas these are connected in parallel in circuit (Y).

1. Given below is a sketch of a leaf of a potted plant which is partially covered with black paper and is to be used in the experiment to show that light is necessary for the process of photosynthesis. At the end of the experiment which one of the leaf parts labelled I, II and III will become blue black when dipped in iodine solution ?



(a) I and II (b) II only (c) I and III (d) II and III

1. A black strip of paper was clipped on to a destarched leaf in a potted plant to cover a part of the leaf. The plant was then exposed to sunlight for four hours, the paper strip was removed and the leaf tested for starch. When iodine solution was added : (a) the entire leaf turned blue - black (b) the covered part of the leaf became blue - black (c) the uncovered part of the leaf became blue - black. (d) the colour of iodine solution remained unchanged
2. Temporary mount of a peel is made in : (a) Alcohol (b) Water (c) Glycerine (d) Acetone
3. When a student observed a stomatal epidermal peel under the microscope, it appeared pinkish red. The stain used was : (a) Iodine (b) Methyl orange (c) Safranin (d) Methylene blue
4. A student has drawn the figure to show the observed condition at the end of performing the experiment to show that germinating seeds give out CO2 during respiration. Choose the correct diagram.



(a) A (b) B (c) C (d) D

1. Using the same number of given germinating seeds, two students A and B set up the experiment separately. Student A used a cotton plug to hold the bent tube to the mouth of the flask. Student B used air tight rubber cork.



Which one of the following is to be observed after a few hours ? (a) Water level would rise in the bent tube of A. (b) Water level would rise in the bent tube of B. (c) The cotton plug would become wet. (d) The water in the beaker of B would turn milky.