

SUMMATIVE ASSESSMENT – I, 2015-16
SCIENCE / Class – X

Time Allowed : 3 hours

Maximum Marks : 90

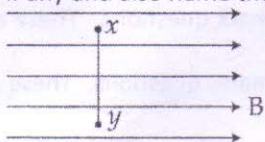
General Instructions :

1. The question paper comprises of two Sections, A and B. You are to attempt both the sections.
2. All questions are compulsory
3. All questions of Section-A and all questions of Section-B are to be attempted separately.
4. Question numbers 1 to 3 in Section-A are one mark questions. These are to be answered in one word or in one sentence
5. Question numbers 4 to 6 in Sections-A are two marks questions. These are to be answered in about 30 words each.
6. Question numbers 7 to 18 in Section-A are three marks questions. These are to be answered in about 50 words each
7. Question numbers 19 to 24 in Section-A are five marks questions. These are to be answered in about 70 words each.
8. Question numbers 25 to 33 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.
9. Question numbers 34 to 36 in Section-B are questions based on practical skills. Each question is of two marks.

SECTION-A

- | | | |
|----|---|---|
| 1 | Name the process of loss of water in the form of vapour from the aerial parts of the plants. | 1 |
| 2 | Define magnetic field of a bar magnet. | 1 |
| 3 | List any one harm that is caused to environment by hydro power plant. | 1 |
| 4 | 15 mL of water and 10 mL of sulphuric acid are to be mixed in a beaker.
(i) State the method that should be followed with reason.
(ii) What is this process called? | 2 |
| 5 | The blue colour of copper sulphate solution starts fading when zinc rod is dipped in it. State reason for this change and also write chemical equation for the reaction involved. | 2 |
| 6 | Name the gland and the hormone secreted by the gland, which are associated with the following problems.
(i) a girl has grown extremely tall.
(ii) a woman has a swollen neck. | 2 |
| 7 | Name the type of chemical reaction represented by the following equation :
(i) $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$
(ii) $3 \text{BaCl}_2 + \text{Al}_2(\text{SO}_4)_3 \rightarrow 2\text{AlCl}_3 + 3\text{BaSO}_4$
(iii) $2 \text{FeSO}_4 \xrightarrow{\text{Heat}} \text{Fe}_2\text{O}_3 + \text{SO}_2 + \text{SO}_3$ | 3 |
| 8 | Study the reactions given below.
State which of the following chemical reactions will take place or not, giving suitable reason for each :
(a) $\text{Zn}_{(s)} + \text{CuSO}_{4(aq)} \rightarrow \text{Zn SO}_{4(aq)} + \text{Cu}_{(s)}$
(b) $\text{Fe}_{(s)} + \text{ZnSO}_{4(aq)} \rightarrow \text{Fe SO}_{4(aq)} + \text{Zn}_{(s)}$
(c) $\text{Zn}_{(s)} + \text{FeSO}_{4(aq)} \rightarrow \text{Zn SO}_{4(aq)} + \text{Fe}_{(s)}$ | 3 |
| 9 | Why some metal surfaces acquire a dull appearance when they are exposed to moist air? Write colour acquired by the surfaces of copper and silver in such situation and also write the chemical names of the substances due to which it happens. | 3 |
| 10 | Explain the action of dilute hydrochloric acid on the following with chemical equations :
(i) magnesium ribbon (ii) sodium hydroxide (iii) crushed egg shells | 3 |
| 11 | Explain how fats are digested in our bodies. Where does this process takes place ? | 3 |
| 12 | Define the terms phototropism and geotropism. State any four roles of plant hormones. | 3 |
| 13 | Explain the structure of bronchi with the help of a neat diagram and label on it
(i) trachea (ii) bronchiole | 3 |

- 14 Define an electric circuit. Draw a labelled, schematic diagram of an electric circuit comprising of a cell, a resistor, an ammeter, a volt meter and a closed switch.
- 15 B represents a uniform magnetic field parallel to the plane of paper west to east (as shown). State whether there will be any induced current in the conductor XY when it moves – 3
- in the direction of B
 - perpendicular to B in the plane of paper
 - upwards and perpendicular to the plane of paper. In each case give the direction of induced current if any and also name the rule applied to determine the direction.



- 16 How will the strength of magnetic field at a point around a current carrying conductor change, when the - 3
- current in the conductor is increased ?
 - direction of current is reversed ?
 - distance of the point is increased ?
- 17 Villagers in Mohan's village use their animal dung as dung cakes for fuel requirement. When Mohan returned to his village, after completing his studies from nearby city, he suggested in village panchayat to set up a biogas plant in the village. 3
- Do you think Mohan's suggestion is appropriate? Give reason for your answer.
 - Which quality of Mohan gives inspiration to villagers?
- 18 Nikhil has set up a solar cooker in a box using a black painted aluminum sheet, a glass plate and a mirror. State the role of each item used in the solar cooker. 3
- 19 (a) Define universal indicator. For what purpose it is used? 5
- (b) Two solutions A and B have pH values of 3.0 and 9.5 respectively Which of these will turn litmus solution from blue to red and which will turn phenolphthalein from colourless to pink?
- (c) Water is a neutral substance. What colour will you get when you add a few drops of universal indicator to a test tube containing distilled water?
- 20 Write the electronic configuration of magnesium (atomic no. 12) and oxygen (atomic no. 8) and explain the formation of magnesium oxide by electrons transfer of State the type of bond formed. Explain with reason two physical properties of compounds formed by this bonding. 5
- 21 With the help of a labelled diagram explain the general scheme to illustrate how nervous impulses travel in the body. 5
- 22 Establish a relation for the equivalent resistance of three resistors connected in series. 5
- Calculate the equivalent resistance of the combination of three resistors of 12Ω , 6Ω and 4Ω joined in parallel.
- 23 (a) Draw magnetic field lines of a bar magnet. "Two magnetic field lines never intersect each other". Why? 5
- (b) An electric oven of 1.5 kW is operated in a domestic circuit (220 V) that has a current rating of 5 A. What result do you expect in this case? Explain.
- 24 Explain the following : 5
- Alloys are used to make conductors of electrical heating appliances.
 - Metals of low resistivity are used for electricity transmission
 - Series arrangement is not used for domestic circuits.

SECTION – B

- 25 The pH of a NaOH solution is 10. If water is added to it, its pH will : 1
- Remains same
 - Increases
 - Decreases
 - Becomes 7
- 26 A student puts a few drops of an unknown solution on the pH strip, the colour of pH strip changed to violet. The solution taken is likely to be : 1
- dil hydrochloric acid
 - dil sodium hydroxide
 - dil ethanoic acid
 - water

- 27 In which form zinc metal is used from laboratory to prepare hydrogen? 1
- (a) Rod (b) Powder
(c) Filing (d) Granules

- 28 Anindita took three metals labelled X, Y and Z. She carried out displacement reactions with their salt solutions. She observed that : 1



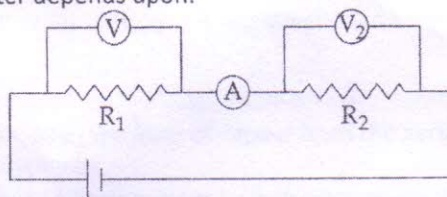
The correct conclusion is :

- (a) Z is more reactive than Y and Y is more reactive than X
(b) Z is more reactive than X, and X is more reactive than Y
(c) Y is more reactive than X, and X is more reactive than Z
(D) X is more reactive than Z, and Z is more reactive than Y

- 29 On adding an aluminium strip to zinc sulphate solution, the observations made are : 1

- (a) No change in colour of the solution, new coating on aluminium.
(b) colour of solution changes to blue, black deposits on aluminium.
(c) Solution turns green, reddish – brown deposits on aluminium.
(d) Solution colourless, green deposits on aluminium.

- 30 To find the equivalent resistance of two resistors connected in series In the circuit shown below the value of the current in ammeter depends upon:- 1



- (a) only R_1 (b) only R_2
(c) both R_1 and R_2 (d) neither R_1 nor R_2 *when in*
- 31 The resultant resistance of two resistors is 2Ω , *when* whether they are arranged *in* series or parallel. The resistance of each resistor is. 1

- a) 2Ω b) 4Ω c) 1Ω d) 0.5Ω

- 32 A portion of each of four de-starched leaves of plant was covered with paper strips of various colors. The plant was exposed to sunlight for 5 hours. Thereafter the strips were removed and the leaves tested for starch in the covered portion. Which one out of the four leaves gave the positive starch test in the covered portion? 1

- (a) That covered with black paper strip
(b) That covered with green paper strip
(c) That covered with white paper strip
(d) That covered with a transparent paper strip

- 33 The KOH solution used in the experiment to show that 'CO₂ is given out during respiration' should be prepared: 1

- (a) Fresh
(b) Two days before the experiment
(c) Five days before the experiment
(d) Just one day before the experiment

- 34 A student mixes solid sodium sulphate powder in solid barium chloride powder. What change on mixing the two solids would the student observe? Justify your answer and explain how he can obtain the expected change. 2

- 35 How will you calculate the least count of an ammeter? 2

- 36 In an experiment to prepare temporary stained mount of a leaf epidermal peel, how can extra stain be removed? What possible outcome would be observed if it is removed with cotton wool? 2