

SUMMATIVE ASSESSMENT –I

SCIENCE 2013

Class – X

Time allowed: 3 hours

Maximum Marks: 90

General Instructions:

- (i) All questions are compulsory.
- (ii) The question paper comprises of two sections, A and B. You are to attempt both the sections.
- (iii) Questions 1 to 4 in section A are one mark questions. These are to be answered in one word or in one sentence.
- (iv) Questions 5 to 11 in section A are two marks questions. These are to be answered in about 30 words each.
- (v) Questions 12 to 23 in section A are three marks questions. These are to be answered in about 50 words each.
- (vi) Questions 24 to 27 in section A are five marks questions. These are to be answered in about 70 words each.
- (vii) Questions 28 to 43 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. Write a balanced chemical equation for a chemical combination reaction.
2. Name the metal which has very low melting point and can melt with heat of your palm.
3. Why is the box of a solar cooker covered with a glass plate ?
4. The voltage - current (V-I) graph of a metallic conductor at two different temperature T_1 and T_2 is shown below. At which temperature is the resistance higher ?

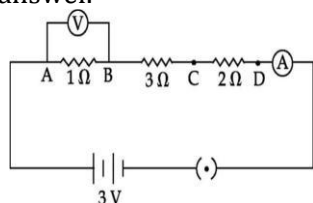
5. Why is sodium stored in kerosene ?
6. (a) Why does blue vitriol change to white on heating ?
(b) Write its formula.
7. What happens in a displacement reaction. Justify your answer giving one example.
8. (a) Balance the chemical equation :
$$\text{Fe(s)} + \text{H}_2\text{O(g)} \rightarrow \text{Fe}_3\text{O}_4\text{(s)} + \text{H}_2\text{(g)}$$

(b) Identify the type of reaction in the equation given below :
$$\text{Na}_2\text{SO}_4\text{(aq)} + \text{BaCl}_2\text{(aq)} \rightarrow \text{BaSO}_4\text{(s)} + \text{NaCl(aq)}$$
9. State the function of the guard cells. What will happen to the guard cells and stomatal pore when water flows to guard cells ?
10. Name the major constituent of biogas. List three characteristics to prove it as an excellent fuel.
11. How much current will an electric bulb draw from a 220V source, if the resistance of the bulb-filament is 1200 ohms ? How much power will it use?

12. A student performs an experiment to study the magnetic effect of current around a current carrying straight conductor with the help of a magnetic compass. He reports that
- the degree of deflection of the magnetic compass increases when the compass is moved away from the conductor.
 - the degree of deflection of the magnetic compass increases when the current through the conductor is increased.

Which of the above observations of the student appears to be wrong and why ?

13. How would the reading of voltmeter (V) change if it is connected between B and C ? Justify your answer.



14. Explain why :

- Respiration is an exothermic reaction,
 - All decomposition reactions are endothermic reactions.
 - When blue salt of copper sulphate is heated it becomes colourless.
15. What is Bleaching powder chemically called ? Give reaction involved in its preparation. Give one of its uses.
16. (a) How is common salt prepared from sea water?
 (b) What will be the approximate pH of the aqueous solutions of the following salts :
 (i) Sodium chloride
 (ii) Ammonium Chloride
17. (a) Why should we use iodized salt in our diet ?
 (b) If iodine is insufficient in one's diet, what might be the deficiency disease ?
18. What is chemotropism? Give one example. Name any two plant hormones and mention their functions.
19. Biomass has been used as fuel since ancient times, how has it been modified to function as a more efficient fuel in the recent past?
20. Two identical resistors, each of resistance 20Ω are connected (i) in parallel (ii) in series, in turn, to a battery of 10 V. Calculate the ratio of power consumed in the combination of resistors in the two cases.
21. Two conducting wires of same material, equal length and equal diameter are first connected in series and then in parallel. Compare the equivalent resistance in two cases.
22. What change in the deflection of the compass needle placed at a point near current carrying straight conductor shall be observed If the –
 (a) current through the conductor is increased,
 (b) direction of current in the conductor is reversed?
 (c) compass is moved away from the conductor
23. (a) Identify the substance oxidized, substance reduced, oxidizing agent and reducing agent in the following reaction : $ZnO + C \rightarrow Zn + CO$
 (b) Packets of potato chips are flushed with nitrogen gas, why ?
24. (i) Write the electron - dot structures for sodium, oxygen and magnesium.

- (c) both are acidic solutions.
- (d) both are basic solutions.

30. Prachi added dil. HCl to a test tube containing zinc granules and noted the following observations :

- (i) The zinc surface became dull and black.
- (ii) A gas evolved which burnt with a pop sound. (iii) The solution remained colourless.

The observations found correct are

- (a) I and II
- (b) II and III
- (c) III and I
- (d) I, II and III

31. When an iron nail rubbed with sand paper is dipped in copper sulphate solution, we observe that copper gets deposited

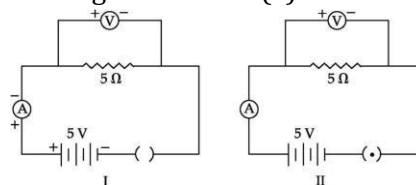
- (a) first on the lower part of the nail and proceeds to the upper part.
- (b) first on the upper part of the nail and proceeds to the lower part.
- (c) on the entire surface of the nail.
- (d) on the nail in small patches.

32. Rahul adds aqueous solution of barium chloride to an aqueous solution of sodium sulphate. He would observe that

- (a) a pungent smelling gas is evolved.
- (b) the colour of the solution turns red.
- (c) a yellow precipitate is formed after sometime.
- (d) a white precipitate is formed almost immediately.

33. For the circuits shown in figure I and II the ammeter readings would be : (a) 1A in circuit I and 0A in circuit II

- (b) 0A in both circuits
- (c) 1A in both
- (d) 0A in circuit I and 1A in circuit II



34. You are given four voltmeters of given ranges. The correct choice of voltmeter for doing the experiment with a battery of 4.5 V is :

- (a) Voltmeter with range of 0 - 1V
- (b) Voltmeter with range of 0 - 3V
- (c) Voltmeter with range of 0 - 4V
- (d) Voltmeter with range of 0 - 5V

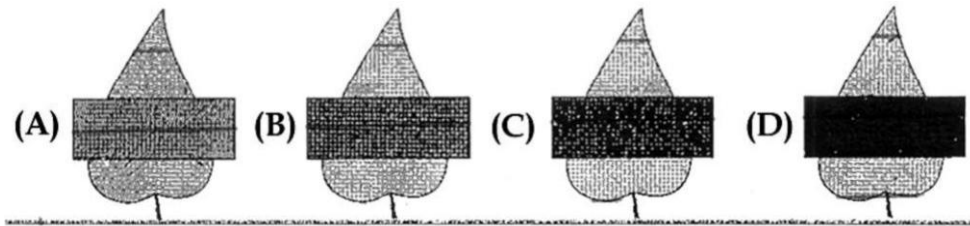
35. Two students are using the circuits shown here. They are doing the experiment to find the equivalent resistance of a :

- (a) series combination and a parallel combination respectively of the two given resistors.
- (b) parallel combination and a series combination respectively of the two given resistors.
- (c) series combination of the two given resistors in both the cases.
- (d) parallel combination of the two given resistors in both the cases.

36. Two resistances R_1 and R_2 are to be connected in series combination. Out of the following the correct combination is shown in :

- (a) only A
- (b) only B
- (c) only C
- (d) all of them A, B and C

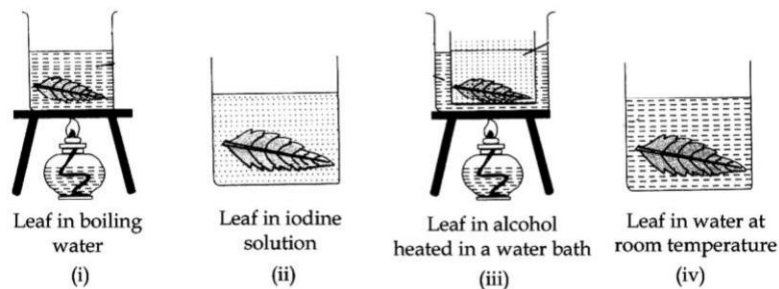
37. In an experiment on photosynthesis students were instructed to cover a portion of a leaf of a destarched potted plant with opaque paper as shown :



“A” covered one of the leaves with red strip, “B” with green, “C” with blue, “D” with black. When the starch test was done on the leaves after 4 hours, the result showed no starch in :

- (a) the portion covered with red, green & blue strips
- (b) the portion covered with green strips
- (c) the portion covered with black and blue strips
- (d) any of the covered portions

38. A student performed starch test on a leaf. Four steps involved in the test are shown below :

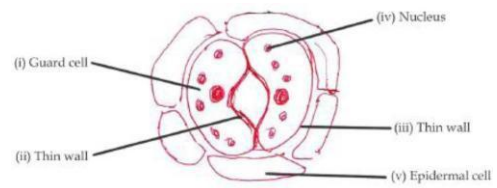


The correct sequence of steps should be

- (a) (iv), (iii), (i), (ii)
- (b) (i), (ii), (iv), (iii)
- (c) (ii), (iii), (iv), (i)
- (d) (i), (iii), (iv), (ii)

39. In the following diagram of the stomatal apparatus, which parts are correctly labelled ?

- (a) (i) and (v)
- (b) (ii) and (v)
- (c) (iv) and (ii)
- (d) (v) and (iv)



40. When an epidermal of a leaf is observed through a high powered microscope, it shows that each stomata is surrounded by
- (a) many guard cells.
 - (b) a pair of guard cells.
 - (c) a single guard cell.
 - (d) a pair of epidermal cells.
41. The correct set of three precautions for setting up the experiment to demonstrate that CO₂ is evolved during respiration is :
- (a) Thread holding KOH test tube, Airtight flask, delivery tube above water surface in the beaker
 - (b) Flask has just germinated seeds, Airtight set up, delivery tube dip in water in beaker.
 - (c) Flask has seeds covered with water; Airtight set up, KOH test tube held by a thick wire.
 - (d) Just germinated seeds under water in the flask, delivery tube above water level, Thread holding KOH test tube.
42. Four sets of three precautions to be taken while setting up the experiment to show that CO₂ is evolved during respiration are given below. Find the correct set of precautions.
- (a) Airtight setup, delivery tube dips in water in beaker, germinating seeds in flask
 - (b) Thread holding KOH pellets, airtight flask, delivery tube just above the water level in beaker
 - (c) Germinated seeds completely under the water in the flask, experimental setup not airtight, delivery tube above water level.
 - (d) Delivery tube touching the bottom of the beaker, KOH pellets kept along with germinating seeds at the bottom of the flask, seeds should not germinate.
43. 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