
CBSE Sample Paper-05 (Unsolved)
SUMMATIVE ASSESSMENT –I
SCIENCE (Theory)
Class – X

Time allowed: 3 hours

Maximum Marks: 90

General Instructions:

- a) All questions are compulsory.
- b) The question paper comprises of two sections, A and B. You are to attempt both the sections.
- c) Questions 1 to 3 in section A are one mark questions. These are to be answered in one word or in one sentence.
- d) Questions 4 to 6 in section A are two marks questions. These are to be answered in about 30 words each.
- e) Questions 7 to 18 in section A are three marks questions. These are to be answered in about 50 words each.
- f) Questions 19 to 24 in section A are five marks questions. These are to be answered in about 70 words each.
- g) Questions 25 to 27 in section B are 2 marks questions and Questions 28 to 36 are multiple choice questions based on practical skills. Each question of multiple choice questions is a one mark question. You are to select one most appropriate response out of the four provided to you.

Section A

1. Write the chemical formula for the following:
(a) Calcium Fluoride (b) Iron (II) Bromide
2. Name to kinds of cells (elements) of xylem.
3. Two wires, one of manganin and the other of copper have equal lengths and resistances. Which one of these wires will be thicker?
4. What does 'slaking of lime' stand for? Why is there a hissing sound during this process? Write the chemical equation for the reaction involved.
5. What is autonomic nervous system?
6. What is the function of earth wire? Why is it necessary to earth the metallic appliance?
7. Give the characteristics tests for the following gases:
(a) CO₂ (b) O₂ (c) H₂
8. Seema bought a chips packet and open it. Suddenly her friend Shanu came. She started playing and forgot to eat the chips. On the next day, when she ate the chips, she felt the taste was not good and she was not feeling well. She told her mother to take her to a doctor. The doctor told them this is because of eating rancid chips. He gave medicines by which Seema became well within a few days.

- (i) Why do chips remain fresh for a longer time in a sealed packet?
- (ii) Why did chips of an open packet become rancid?
- (iii) What value do you learn from this passage?

[Value Based Question]

9. A compound X of sodium forms a white powder. It is a constituent of baking powder and is used in some antacid prescriptions. When heated, X gives out a gas and steam. The gas forms a white precipitate with limewater. Write the chemical formula and name of X and the chemical equation for its decomposition on heating. What is its role in baking powder and in antacids.
10. Name with examples three common compounds in which metal occur in nature. Write chemical equation for the metal reacting with a dilute acid to produce hydrogen gas.
11. Explain how the following metals are obtained from their compounds by the reduction process:
- (a) Metal 'X' which is low in reactivity series.
 - (b) Metal 'Y' which is middle of the reactivity series.
 - (c) Metal 'Z' which is high up in the reactivity series.
12. Draw a diagram to show internal structure of human heart. Label six parts in all including at least three valves.
13. Draw a label diagram of the labelled structure of a nephron.
14. Give the full form of GH. Name the gland that secretes it. Mention its any two functions. Name the hormone that inhibits the secretion of GH. Name the disorder that is caused due to the failure of Insulin secretion.
15. (a) Two conductors A and B of resistances 5 ohm and 10 ohm respectively can be arranged in parallel and later on in series. In each arrangement, the total voltage applied across it is 20 volts. In which arrangement will the voltage across A and B be the same and in which case will the current flowing through A and B be the same?
- (b) Calculate the total resistance for each arrangement.
16. (a) Why does a rectangular coil carrying current rotate in a magnetic field?
- (b) Does a current carrying conductor experience a force when placed in a magnetic field? Give two application of this.
17. Write different ways of harnessing energy from ocean.
18. What is a nuclear waste? What are the hazards of nuclear waste to living things? How is it disposed off?
19. Consider the chemical equation given below and answer the questions that follow:
- $$\text{CuO} + \text{H}_2 \xrightarrow{\text{Heat}} \text{Cu} + \text{H}_2\text{O}$$
- (a) Name the substance which is getting oxidized.
 - (b) Name the substance which is getting reduced.
 - (c) Name the oxidizing agent.
 - (d) Name the reducing agent.
 - (e) What type of a reaction does this equation represent?

Or

- (a) What do you mean by precipitation reactions? Explain with examples.
- (b) Grapes hanging on the plant do not ferment but after being plucked from the plant can be fermented. Under what conditions do these grapes ferment? It is a chemical or a physical change?
20. (i) Given below are the steps for the extraction of copper from its ore. Write the reaction involved.
- (a) Roasting of Copper (I) sulphide
 - (b) Reduction of Copper (I) oxide with copper (I) sulphide
 - (c) Electrolytic refining
- (ii) Draw a neat and well labelled diagram for electrolytic refining of copper.

Or

A metal lies in the middle of activity series. It occurs both as sulphides and carbonate.

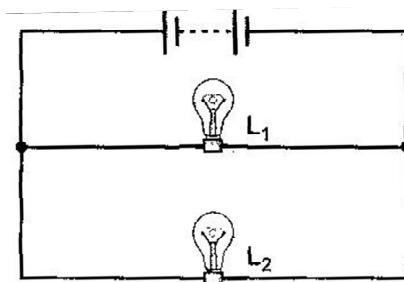
- (a) Identify the metal.
- (b) How can one extract this metal from its ore?
21. Briefly describe the mechanism of urine formation.

Or

- (i) State differences between artery, vein and capillary.
- (ii) Write a note on lymphatic system in human beings stating two major functions of lymph.
22. (a) How can we magnetize a material? Give the character of magnetic materials used.
- (b) Does a current carrying conductor experience a force when placed in a magnetic field? Give two applications of this.
- (c) Why does a rectangular coil carrying current rotate in a magnetic field?

Or

- (a) Explain how Oersted explained the formation of magnetic field in its surround?
- (b) What are magnetic poles? How can you identify them?
- (c) How can we demonstrate the formation of magnetic field surrounding a magnet?
23. (a) Define kilowatt hour (kWh). Which quantity is measured in kWh?
- (b) Figure shows a battery of 12 V supplying power to two lamps.
The total power supplied is 150 W when both lamps are on.

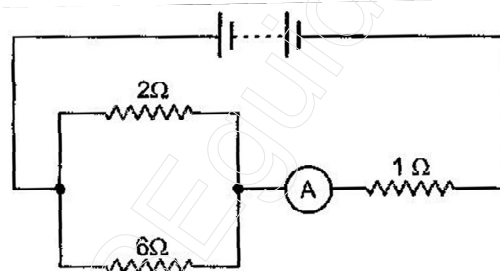


- (i) Calculate the current supplied by the battery when both lamps are on.
- (ii) The current in lamp L_2 is 5.0 A.
Calculate the current in lamp L_1 , the power of lamp L_1 , the resistance of lamp L_1 .

Or

- (a) Draw a schematic diagram showing common domestic circuit.
- (b) State the function of an earth wire. Why is it necessary to earth metallic appliances such as an electric iron?

24. Figure shows a circuit containing a battery, three resistors and an ammeter.



- (a)
 - (i) Write down the equation for the effective resistance R_P of two resistors of resistances R_1 and R_2 connected in parallel.
 - (ii) Use this equation to calculate the effective resistance of the two resistors in parallel in figure.
- (b) A voltmeter is to be used to measure the potential difference across the resistors in parallel.
 - (i) On figure draw the voltmeter in position in the circuit, using the correct circuit symbol.
 - (ii) The ammeter reads 1.6 A. Calculate the reading on the voltmeter.
- (c) State what happens to the ammeter reading if the 1Ω resistor is replaced by a 3Ω resistor.

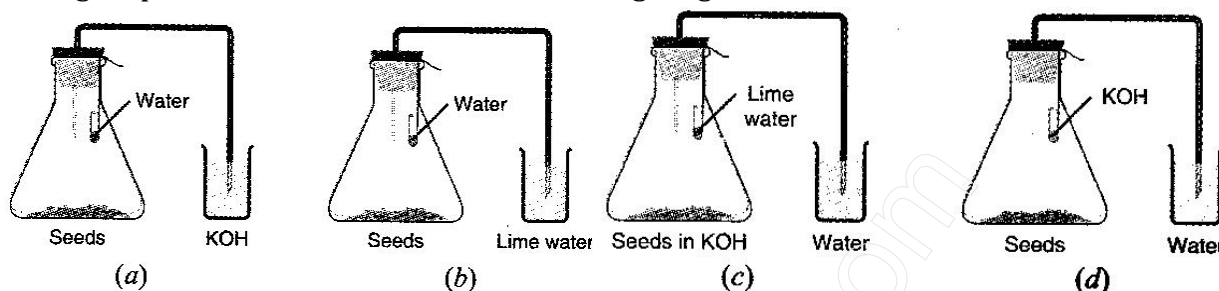
Or

Two resistors with resistance of 10Ω and 15Ω are connected to a battery of 12 V so as to obtain and measure (i) minimum electric current (ii) maximum electric current.

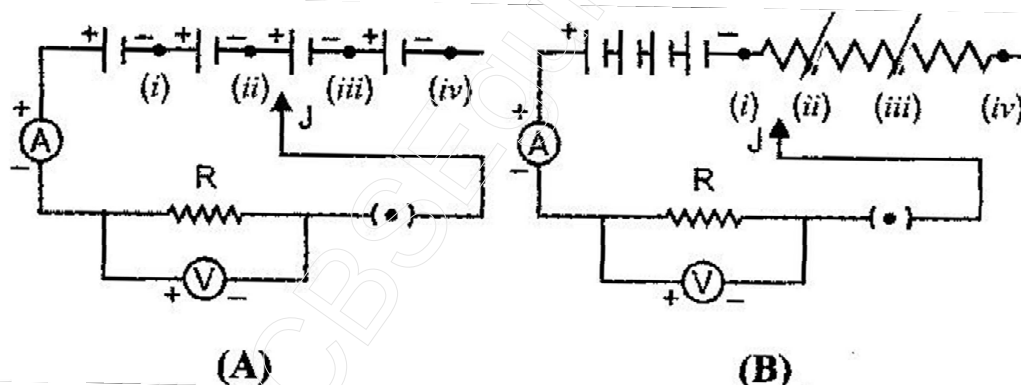
- (a) State the mode of connecting the resistors in each case with the help of a circuit diagram.
- (b) Calculate the strength of total electric current in the circuit in each case.

Section B

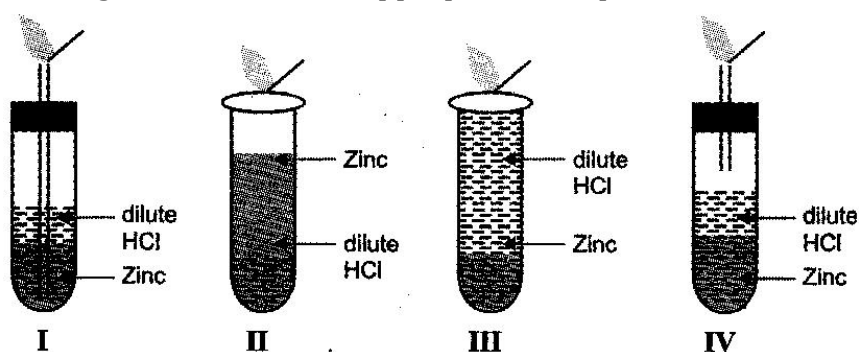
25. A student added dilute NaOH to a test tube containing Zinc granules and heated the contents.
- What changes will be observed?
 - Justify your answer.
26. After performing the experiment to show that germinating seeds give out carbon dioxide during respiration, students drew the following diagrams.



- Which is the correct diagram?
 - Justify your answer.
27. To study the dependence of current (I) on the potential difference (V) across a resistor R, two students used the two set ups shown in the figure A and B respectively. They kept the contact point J in four different positions, marked (i), (ii), (iii) and (iv) in the two figures.



- What will be the position of contact J, when for the two students, the readings of ammeter and voltmeter will be maximum?
 - Justify your answer.
28. Four set ups given below were arranged to identify the gas evolved when dilute Hydrochloric acid was added to Zinc granules. The most appropriate set up is:



- (a) I (b) II (c) III (d) IV

29. Some crystals of copper sulphate were dissolved in water. The colour of solution obtained would be:

- (a) green (b) red (c) blue (d) brown

30. When an aluminium strip is kept immersed in freshly prepared ferrous sulphate solution taken in a test tube, the change which is observed is:

- (a) The green solution slowly turns brown.
 (b) The lower end of the test tube becomes slightly warm.
 (c) A colourless gas with smell of burning sulphur is observed.
 (d) Light green solution changes to blue.

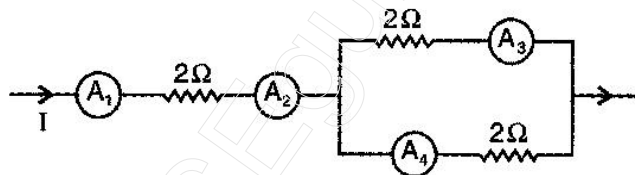
31. Synapse is bringing together of:

- (a) two veins (b) two venules (c) two neurons (d) two arteries

32. Depression in retina, which has cones only, is:

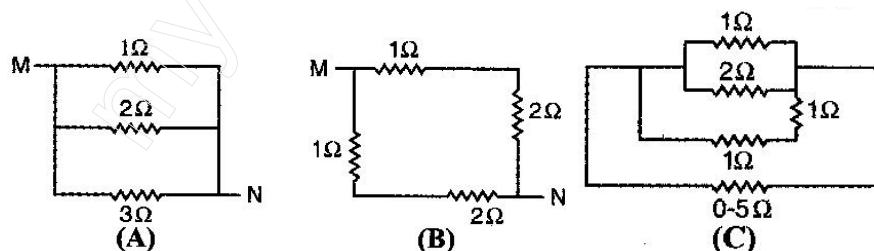
- (a) fenestra ovails (b) blind spot (c) fenestra rotunda (d) fovea centrails

33. The ammeter showing equal current in the following circuit are:



- (a) A_1 and A_2 (b) A_3 and A_4
 (c) Both (a) and (b) (d) Neither (a) nor (b)

34. The equivalent resistance is the least in which of three cases:

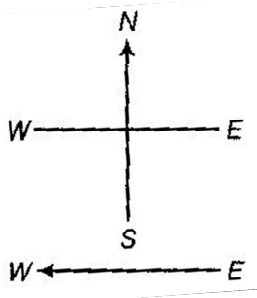


- (a) C (b) B (c) A (d) A and C

35. The power generated in a wind mill::

- (a) is more in rainy season since damp air would mean more air mass hitting the blades.
 (b) depends on the height of the tower.
 (c) depends on wind velocity.
 (d) can be increased by planting tall trees close to the tower.

36. A constant current flows in a horizontal wire in the plane of the paper from east to west as shown in figure. The direction of magnetic field at a point will be north to south:



- (a) directly above the wire.
- (b) directly below the wire.
- (c) at a point located in the plane of the paper, on the north side of the wire.
- (d) At a point located in the plane of the paper on the south side of the wire.