

CBSE
Class X Science
Term 1
Sample Paper - 1

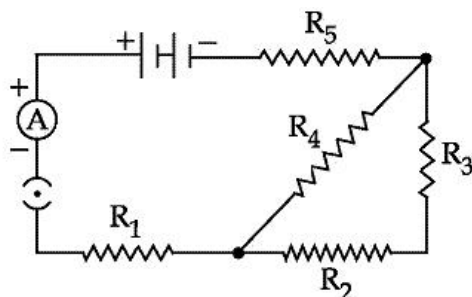
Time: 3 hrs
Total Marks: 90
General Instructions:

1. The question paper comprises **two sections, A and B**. You are to attempt both the sections.
2. There is no overall choice. However, internal choice has been provided in all the five questions in the five marks category. Only one option in such questions is to be attempted.
3. All the questions of **Section A** and **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 one sentence.
5. Question numbers **4 to 6** in **Section A** are **two marks** questions to be answered in about **30 words each**.
6. Question numbers **7 to 18** in **Section A** are **three marks** questions to be answered in about **50 words**.
7. Question numbers **19 to 24** in **Section A** are **five marks** questions to be answered in about **70 words**.
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 and are two marks questions.

SECTION A

- Q. 1** Define the term rancidity. (1)
- Q. 2** What is meant by the statement that the potential difference between two points is 1 volt? (1)
- Q. 3** What happens to a plant cell when we keep it in a hypotonic solution? (1)
- Q. 4** The burning of a candle is accompanied by both physical and chemical changes. Mention the observations which help to deduce that both physical and chemical changes are taking place. (2)

Q. 5 Consider the following circuit diagram. If $R_1 = R_2 = R_3 = R_4 = R_5 = 3\Omega$, then find the equivalent resistance of the circuit. (2)



Q. 6 Identify the poles of the magnet in Figures (1) and (2). (2)

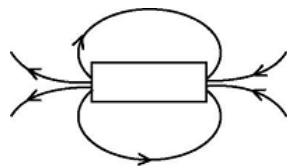


Figure - 1



Figure - 2

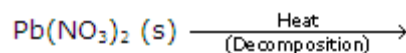
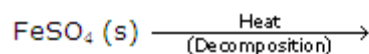
Q. 7 Give three differences between xylem and phloem. (3)

Q. 8 (3)

(a) What happens when copper is burned in air? Give the equation. What type of a reaction is it?

(b) What happens when hydrogen gas is passed over the product obtained in the step above? Also give the equation.

Q. 9 Complete the following reactions and write the balanced equations: (3)



Q. 10 (3)

(i) Write the chemical name and formula of 'Plaster of Paris'.

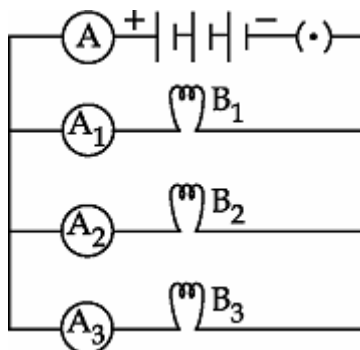
(ii) How is it prepared?

(iii) Write the chemical equations of the reaction.

Q. 11 You are provided with three test tubes A, B and C which contain distilled water, acidic and basic solutions. If you are given blue litmus paper only, how will you identify the nature of the solutions in the three test tubes? (3)

- Q. 12** Give reasons: (3)
- Ionic compounds have high melting points.
 - Ionic compounds are hard crystalline solids.
 - Ionic compounds dissolve in water.

- Q. 13** Study the circuit shown in which three identical bulbs B_1 , B_2 and B_3 are connected in parallel with a battery of 4.5 V. (3)



- What will happen to the glow of the other two bulbs if the bulb B_3 gets fused?
 - If the wattage of each bulb is 1.5 W, what reading will the ammeter A show when all the three bulbs glow simultaneously?
 - Find the total resistance of the circuit.
- Q. 14** Dams are constructed to generate electricity from water stored at a height. People living in the neighbouring areas protested against it to save the flora and fauna. (3)
- What type of energy is possessed by the stored water?
 - What is the energy transformation which takes place in a hydroelectric power plant?
 - What values of the people are shown by this act? (Any two)
- Q. 15** Name the physical quantity which is (i) the same (ii) and different in all the bulbs when three bulbs of (3)
- The same wattage are connected in series
 - The same wattage are connected in parallel
 - Different wattage are connected in series
 - Different wattage are connected in parallel
- Q. 16** How will the magnetic field produced at a point due to a current-carrying circular coil change, if we (3)
- Increase the current flowing through the coil?
 - Reverse the direction of the current through the coil?
 - Increase the number of turns in the coil?

Q. 17 Give reasons for the following: (3)

- (a) The glottis is guarded by the epiglottis.
- (b) The lungs alveoli are covered with blood capillaries.
- (c) The wall of the trachea is supported by cartilaginous rings.

Q. 18 (3)

- (a) The components of an electric circuit are a 0.5-m-long nichrome wire XY, an ammeter, a voltmeter, four cells of 1.5 V each, a rheostat and a plug key. Draw a diagram of the circuit to study the relation between the potential difference across the terminals X and Y of the wire and the current flowing through it.
- (b) State the law which relates the potential difference across a conductor with the current flowing through it.

Q. 19 (5)

- (a) Write the chemical name and formula of washing soda. How is it prepared? Write the chemical equation of the reaction.
- (b) Why does distilled water not conduct electricity, whereas rain water does?

Q. 20 (5)

A metal E is stored under kerosene. When a small piece of it is left open in the air, it catches fire. When the product formed is dissolved in water, it turns red litmus to blue.

- (i) Name the metal E.
- (ii) Write the chemical equation for the reaction when it is exposed to air and when the product is dissolved in water.
- (iii) Explain the process by which the metal is obtained from its molten chloride.

Q. 21 What is a solenoid? Draw the patterns of magnetic field lines of a solenoid through which a steady current flows? What does the pattern of field lines inside the solenoid indicate? Write a use of it. (5)

Q. 22

- (a) State the rule to determine the direction of
 - (i) Magnetic field produced around a straight conductor carrying current.
 - (ii) Force experienced by a current-carrying straight conductor placed in a magnetic field which is perpendicular to it.
 - (iii) Current induced in a coil due to its rotation in a magnetic field.
- (b) Name two safety measures commonly used in domestic electric circuits and appliances.

Q. 23 (5)

- (a) Draw a diagram of the human alimentary canal and label the following:
- Part in which starch digestion starts.
 - Part in which bile is stored.
 - Part in which nutrients are absorbed.
 - Part in which water is absorbed.
- (b) Mention the role of hydrochloric acid in the stomach.
- (c) What function is served by the following?
- Gastric sphincter
 - Anal sphincter

Q. 24 (5)

- (a) Write the three main steps which take place in chloroplasts during photosynthesis.
- (b) How does stomata open and close?
- (c) Which raw material is made available to plants for photosynthesis when stomata are open?

SECTION B

Q. 25 Which of the statements about the reaction below are incorrect? (1)



- Lead is getting reduced.
 - Carbon dioxide is getting oxidised.
 - Carbon is getting oxidised.
 - Lead oxide is getting reduced.
- (i) and (ii)
 - (i) and (iii)
 - (i), (ii) and (iii)
 - All

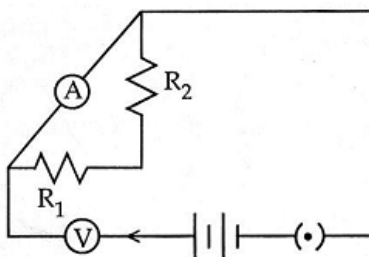
Q. 26 The colour of the pH paper strip turned red when it was dipped into a sample. The sample could be (1)

- Dilute sodium bicarbonate
- Tap water
- Dilute sodium hydroxide
- Dilute hydrochloric acid

Q. 27 Which one of the following cannot be used to find the pH of a solution? (1)

- A. pH paper
- B. Litmus paper
- C. Universal indicator
- D. Standard pH value chart

Q. 28 For carrying out the experiment on finding the equivalent resistance of two resistors connected in series, a student sets up the circuit as shown. On further verification, he finds out that the circuit has one or more of the following faults: (1)

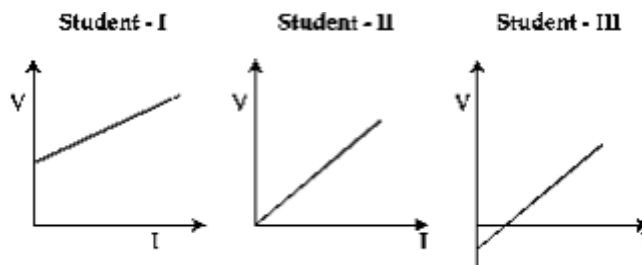


- (i) The resistors R_1 and R_2 have not been correctly connected in series.
- (ii) The voltmeter has not been correctly connected in the circuit.
- (iii) The ammeter has not been correctly connected in the circuit.

Of these three, the actual fault in the circuit is/are

- A. Both (i) and (ii)
- B. Both (ii) and (iii)
- C. Only (i)
- D. Only (ii)

Q. 29 In the experiment on studying the dependence of current I on the potential difference V , three students plotted the following graphs between V and I . The graph which is likely to be correct is that of (1)



- A. Student I only
- B. Student II only
- C. Student III only
- D. All the three students

Q. 30 For the circuits shown in Figures 1 and 2, the ammeter reading would be (1)

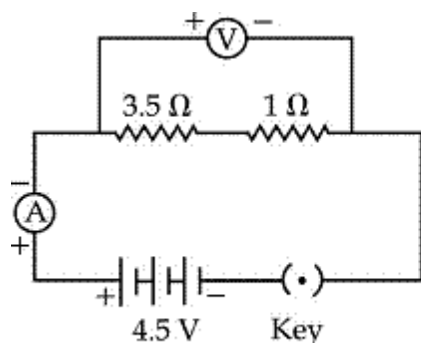


Fig. 1

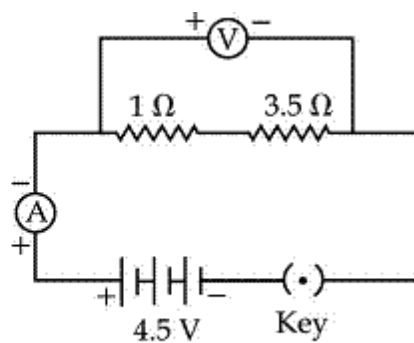
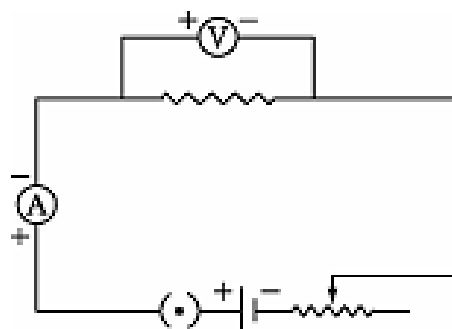


Fig. 2

- A. 1.0 A in Figure 1 and 0.0 A in Figure 2
- B. 0.0 A in both
- C. 1.0 A in both
- D. 1.0 A in Figure 1 and 1.0 A in Figure 2

Q. 31 The two circuit components shown connected in parallel in the following circuit are (1)



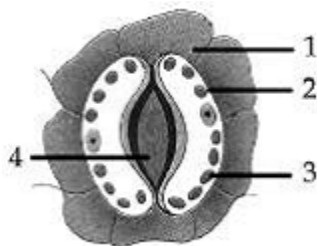
- A. Rheostat and voltmeter
- B. Voltmeter and resistor
- C. Voltmeter and ammeter
- D. Ammeter and resistor

Q. 32 Of the following, which one is needed to demonstrate that 'Light is essential for photosynthesis'? (1)

- A. A Hydrilla twig kept inside a beaker containing water
- B. A variegated leaf
- C. A healthy destarched potted plant
- D. A germinating plant

Q. 33 The following diagram shows the stomatal apparatus as observed in a mounted slide. Its parts have been labelled with numbers. Which number denotes chloroplast?

(1)

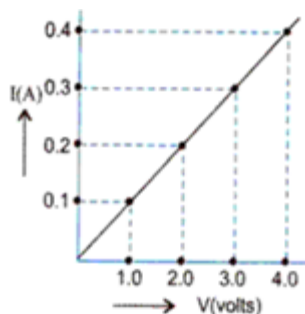


- A. 1
- B. 2
- C. 3
- D. 4

Q. 34 What would a well-stained leaf peel preparation when focused under a high power of the microscope show? (2)

Q. 35 What happens when iron nails are kept in an aqueous solution of CuSO_4 and why? (2)

Q. 36 In the experiment to study the dependence of current on potential difference across a resistor, a student obtained the graph as shown in the diagram.



- (i) What is the value of the resistance of the resistor?
- (ii) Will the slope change if the value of voltage is increased?