

Goa Board
Class X Science
Term 1
Sample Paper - 3

Time: 3 hrs

Total Marks: 90

General Instructions:

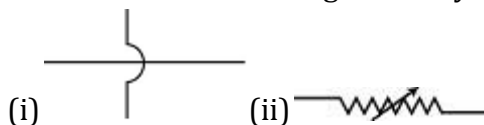
1. The question paper comprises two Sections, A and B. You are to attempt both the sections.
2. All questions are compulsory.
3. All questions of **Section A** and all questions of **Section B** are to be attempted separately.
4. Question numbers **1 to 3** in **Section A** are **one mark** questions. These are to be answered in **one word** or in **one sentence**.
5. Question numbers **4 to 6** in **Section 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 and are two marks questions.

SECTION A

- Q. 1** Name two antioxidants which are usually added to fat- and oil-containing foods to prevent rancidity. (1)
- Q. 2** What is the site for the breakdown of pyruvate to release carbon dioxide, water and energy in the human body? (1)
- Q. 3** Why is the box of a solar cooker covered with a glass plate? (1)
- Q. 4** What is meant by a chemical equation? Using a suitable chemical reaction, differentiate between a skeletal chemical equation and a balanced chemical equation. (2)

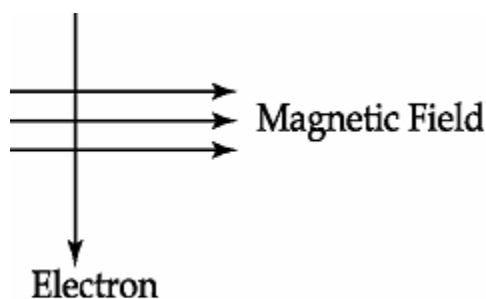
Q. 5 (2)

(a) What does the following circuit symbols represent?



(b) The potential difference between the terminals of an electric heater is 60 V when it draws a current of 4 A from the source. Find the resistance of the heater when in use.

Q. 6 An electron enters a magnetic field at right angles to it as shown. (2)

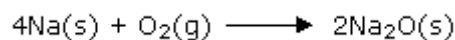


What will be the direction of force acting on the electron? State the rule used to find the direction of this force.

Q. 7 (3)

(a) With the help of a suitable example, explain oxidation and reduction in terms of gain or loss of oxygen.

(b) Identify the substances which are oxidised and the substances which are reduced in the following reaction:



Q. 8 Describe an activity to show the decomposition reaction of ferrous sulphate in the laboratory. (3)

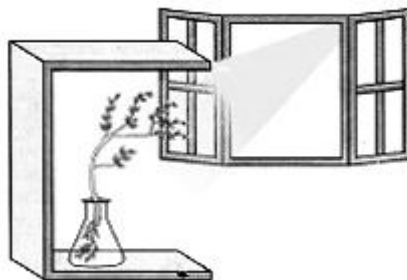
Q. 9 (3)

(a) Define 'water of crystallisation'.

(b) Give two examples of substances having water of crystallisation. Write their chemical formula also.

Q. 10 (3)

- (a) Explain how auxins help in the bending of the plant stem towards light.
- (b) State the objective of the experiment for which the experimental setup is shown in the given diagram.



Q. 11 (3)

- (a) Using a simple experiment, how can you prove that zinc is placed above copper in the reactivity series?
- (b) Why copper metal cannot liberate hydrogen when reacting with dil. HCl?

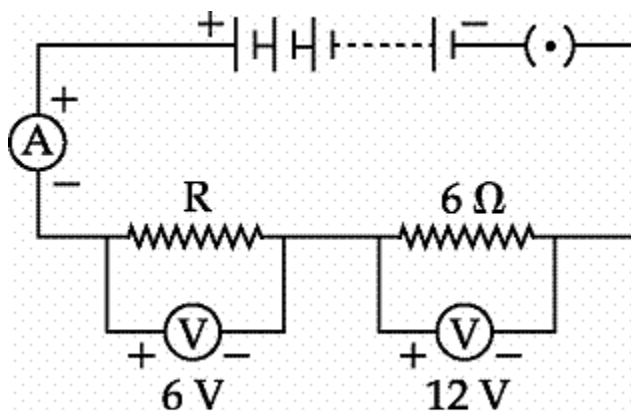
Q. 12 (3)

Write the chemical equation for the preparation of

- (a) Bleaching powder
(b) Plaster of Paris
(c) Caustic soda

Q. 13 List any three limitations in harnessing wind energy. (3)

Q. 14 A circuit is shown in the diagram given below. (3)



Find

- a. The value of R
b. The reading of the ammeter
c. The potential difference across the terminals of the battery

- Q. 15** What is an electromagnet? How is it different from a permanent magnet? State two uses of an electromagnet. (3)
- Q. 16** Mayank's father never bothered to check the brand or contents of the salt he had purchased from the market. Mayank noticed that her sister had developed a swollen neck. The doctor advised her to eat iodised salt. (3)
- Name the disease from which Mayank's sister is suffering.
 - Why has the doctor advised her to eat iodised salt?
 - What is the function of thyroxine?
- Q. 17** (3)
- Why are the heating elements of the electric toaster and the electric iron made of an alloy rather than a pure metal?
 - An electric iron of resistance 20 Ω takes a current of 5 A. Calculate the heat developed in 30 seconds.
- Q. 18** You are given two solar cookers, one with a plane mirror as the reflector and the other with a concave mirror as the reflector. Which one is more efficient? Give reason for your answer. State one more use of a concave mirror. (3)
- Q. 19** (5)
- Write word equations and then balanced equations for the reaction taking place when
 - Dilute sulphuric acid reacts with zinc granules
 - Dilute hydrochloric acid reacts with magnesium ribbon
 - What is a neutralisation reaction?
 - Give two important uses of washing soda.
- Q. 20** (5)
- Write the electron dot structures for sodium, magnesium and oxygen.
 - Show the formation of Na_2O and MgO by transfer of electrons.
 - What are the ions present in these compounds?
 - Why do ionic compounds have high melting points?
- Q. 21** (5)
- A coil of insulated wire is connected to a galvanometer. What would be seen if a bar magnet with its South Pole towards one face of the coil is
 - Moved quickly towards it?
 - Moved quickly away from it?
 - Placed near its one face?
 - Name the phenomenon involved?
 - What are renewable sources of energy?

Q. 22 (5)

- (a) Which gas is filled in an electric bulb and why?
- (b) What do you mean by resistance of a conductor? On what factors do the resistance of a conductor depend and how? Write the SI unit of resistance.
- (c) State Ohm's law.

Q. 23 (5)

- (a) Draw the diagram of the human alimentary canal and label the following:
 - (i) Part in which starch digestion starts.
 - (ii) Part in which bile is stored.
 - (iii) Part in which nutrients are absorbed.
 - (iv) Part in which water is absorbed.
- (b) Mention the role of hydrochloric acid in the stomach.

Q. 24 (5)

- (a) Which part of the nervous system controls reflex arcs?
- (b) With the help of a diagram, trace the sequence of events which occur when we touch a hot object?
- (c) Mention the part of the neuron which acquires information and the form in which information travels.

SECTION B

Q. 25 For gas welding used for welding broken pieces of iron, we normally use a mixture of (1)

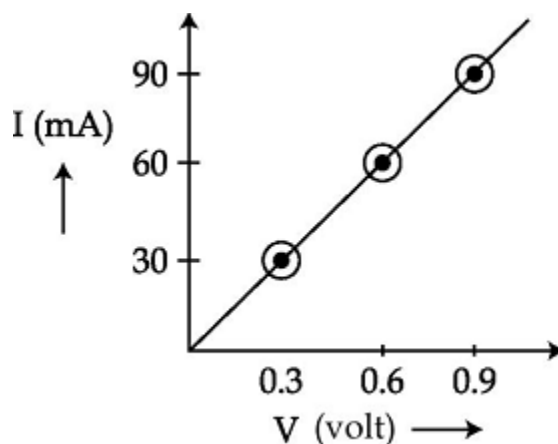
- A. Ethene and air
- B. Ethane and oxygen
- C. Ethene and oxygen
- D. Ethyne and oxygen

Q. 26 Given below are certain chemical properties of substances. (1)

- (i) It turns blue litmus red.
 - (ii) It turns red litmus blue.
 - (iii) It reacts with zinc and a gas evolves.
 - (iv) It reacts with solid sodium carbonate to give brisk effervescence.
- Which out of these properties are shown by dilute hydrochloric acid?

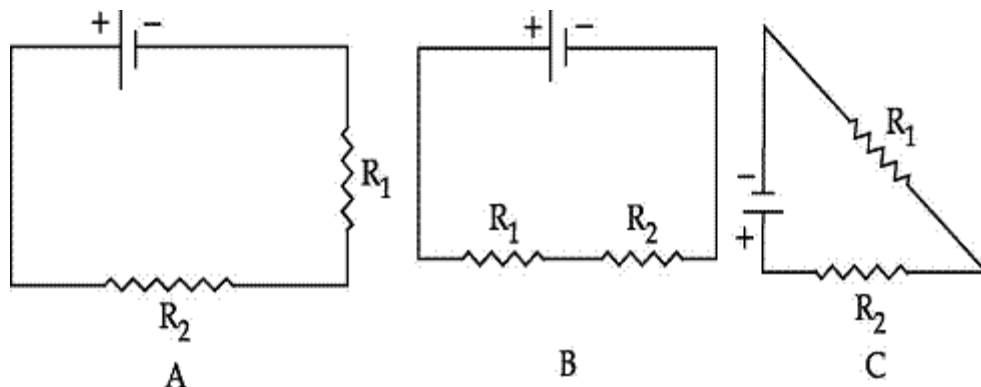
- A. (i) and (ii)
- B. (i) and (iii)
- C. (i), (iii) and (iv)
- D. (ii), (iii) and (iv)

- Q. 27** A student tested the pH of distilled water and found that the colour of the pH paper changed to green. He checked the pH again after dissolving a pinch of common salt in it. The colour of the pH paper this time would be (1)
- Green
 - Yellow
 - Red
 - Blue
- Q. 28** A student connects a circuit to study Ohm's law using a resistor of 3 ohm and a battery eliminator of 6 V. Which of the ammeters should be chosen to read the value of current for this circuit if the ammeters available in the laboratory have the following ranges? (1)
- 0–200 mA
 - 0–100 mA
 - 0–1 A
 - 0–2 A
- Q. 29** While performing the experiment of Ohm's law, a student plotted the following graph. The resistance of the conductor will be (1)



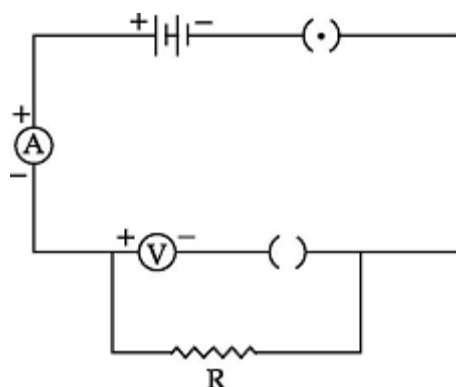
- 1000Ω
- 10Ω
- 100Ω
- 1Ω

- Q. 30** Two resistances R_1 and R_2 are to be connected in a series combination. Of the following, the correct combination is shown in (1)



- A. Only A
B. Only B
C. Only C
D. All of them, A, B and C

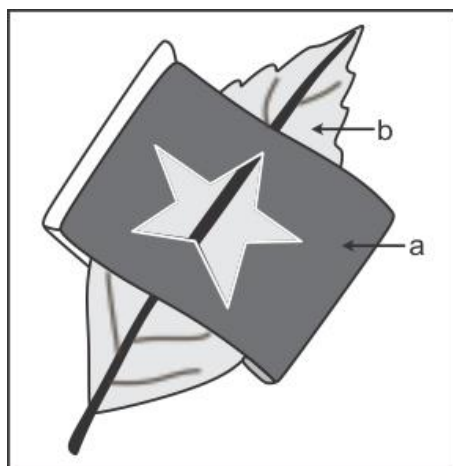
- Q. 31** A student arranged an electric circuit as shown below. (1)



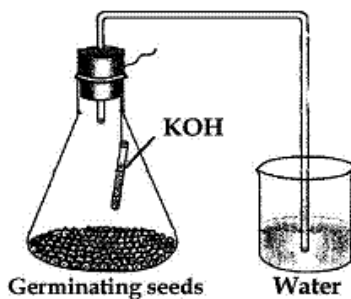
He would observe

- A. No reading in either the ammeter or the voltmeter.
B. No reading in the voltmeter but a finite reading in the ammeter.
C. No reading in the ammeter but a finite reading in the voltmeter.
D. A finite reading in both ammeter and voltmeter.
- Q. 32** To prepare a temporary slide of a leaf peel, the chemicals used for staining are (1)
- A. Iodine and safranin
B. Iodine and glycerine
C. Safranin and glycerine
D. Glycerine and safranin

- Q. 33** A destarched leaf of a potted plant is partially covered with a black strip of paper on the upper and lower surfaces as shown in the figure and kept in sunlight. The starch test was performed after this. What will be the colour of the regions marked as A and B in the leaf? (1)

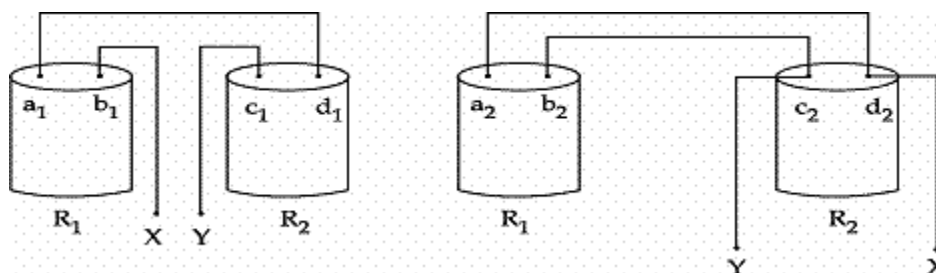


- A. A: blue black, B: pale
B. A: green, B: pale
C. A: pale, B: blue black
D. A: blue black, B: green
- Q. 34** Identify the objective of the following experiment setup. State the significance of KOH in the experiment. (2)

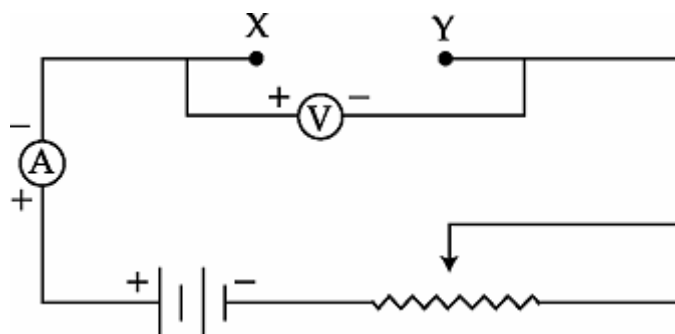


- Q. 35** Equal lengths of Mg ribbon are taken in test tubes A and B. Hydrochloric acid is added to test tube A, while acetic acid is added to test tube B. In which case, the reaction would occur more vigorously and why? Write the chemical equations for reactions in test tubes A and B. (2)

Q. 36 Two students A and B connected their two given resistors R_1 and R_2 in the manner shown below. (2)



Student A connects the terminals marked b_1 and c_1 , while student B connects the terminals marked d_2 and c_2 in their respective circuits at the points marked X and Y.



What will student A and student B determine in connecting the resistors as shown and described above. Give reason. What is the use of a rheostat connected in the circuit?