1080611 - C2 **Class - X**

SCIENCE

Time allowed : **3 to 3½** hours Maximum Marks : **80**

Total No. of Pages : **10**

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. There is no overall choice. However, internal choice has been provided in all the three questions of five marks category. Only one option in such question is to be attempted.

4. All questions to section **A** and all questions of section **B** are to be attempted separately.

5. Question numbers **1** to **4** in section A are one mark questions. These are to be answered in **one word** or **one sentence**.

6. Question numbers **5** to **13** are two mark questions, to be answered in about **30 words**.

7. Question numbers **14** to **22** are three mark questions, to be answered in about **50 words**.

8. Question numbers **23** to **25** are five mark questions, to be answered in about **70 words**.

9. Question numbers **26** to **41** in section **B** are multiple choice questions based on practical skills. Each question is a one mark question. You are to choose one most appropriate response out of the four provided to you.

10. An additional 15 minutes time has been allotted to read this question paper only.

SECTION - A

1. Name two most malleable metals. **1**

2. What is bio-mass ? **1**

3. Name the gas that can be used for storage of fresh sample of chips for a long time. **1**

4. Define the SI unit of resistance ? **1**

5. Classify the following salts into acidic basic and neutral. Potassium sulphate, ammonium chloride, sodium carbonate, sodium chlorides **2**

6. What would you observe when zinc is added to a solution of iron (II) sulphate. Name the type of reaction and write the chemical equation. **2**

7. What is an alloy ? Give the composition and one use each of the following : **2**

(i) Brass (ii) Solder

8. Write the balanced chemical equation for the following reaction and write the name of the reaction : **2**

Barium chloride + Aluminium sulphate $\rightarrow$ Barium sulphate + Aluminium chloride

9. What do you mean by 'ocean thermal energy' ? How electricity can be generated from the energy ? **2**

10. (a) What will happen to the guard cells and stomatal pore when water flows to guard cells ? **2**

(b) How do plants transit informations from cell to cell ?

11. Give reason :

(a) Why tungsten is used for making filament of electric lamps. **1**

(b) The elements of heating electrical appliances are made up of an alloy rather than pure metal. **1**

12. What are permanent magnet and electromagnet ? Give two uses of each. **2**

13. Copper wire has resistance R. If the wire is doubled on it find the new resistance in terms of original resistance ? **2**

14. Account for the following : **3**

(a) Aluminium is more reactive than iron. But its corrosion is less than iron.

(b) Hydrogen gas is not evolved when zinc metal reacts with dil. HNO_3.

(c) Carbon is not used for reducing aluminium from aluminium oxide.

15. (a) Name the chemical substance which is present in ant sting. **3**

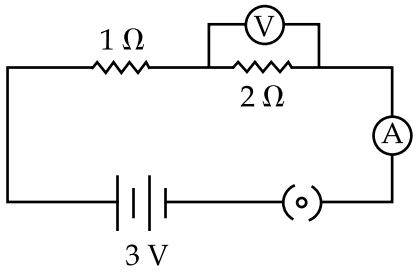
(b) A compound which is prepared from gypsum has the property of hardening when mixed with proper quantity of water. Identify the compound write the chemical equation of its preperation.

16. (a) What will you observe when dilute hydrochloric acid is added to a small amount of copper oxide in a beaker. **3**

(b) Aqueous solution of HCl show acidic character. But the aqueous solution of glucose fail to do so. Why ?

(c) Why Curd and Sour substances not be kept in brass and copper vessels ?

17. What would be the reading of ammeter and voltmeter in the given circuit ? **3**



18. Two conducting wires of same material, equal length and equal diameter are first connected in series. How does the heat produced by the combination of resistance change ? **3**

19. (a) What are the factors on which the magnetic field produced by the current carrying circular coil depends ? **3**

(b) What happens if the current through the coil is reversed.

20. (a) What is Geothermal energy ? **3**

(b) What are the advantages of wind energy.

21. When a sportman runs, he gets muscle cramps. Why ? **3**

22. What are the final products produced after digestion of carbohydrates, protein and fats. ? **3**

23. (a) Name the hormone which is injected to a diabetic patient. **5**

(b) Why should we use iodised salt in our diet ?

(c) If iodine is insufficient in one's diet, what might be the deficiency disease and its symptoms ?

OR

(a) What is reflux arc ?

(b) What are the components of reflux arc ?

(c) How do muscle cells move ?

24. (i) Account for the following. **5**

(a) White silver chloride turns grey in sunlight.

(b) Brown coloured copper powder on heating in air turns into black coloured substance.

(ii) What do you mean by

(a) displacement reaction

(b) Reduction reaction

(c) Combination reaction. Write balanced chemical equation.

OR

(i) Solid calcium oxide was taken in a container and water was added slowly to it :

(a) write the observation

(b) write the chemical formula of the product formed.

(ii) What happens when carbon dioxide gas is bubbled through lime water

(a) in small amount

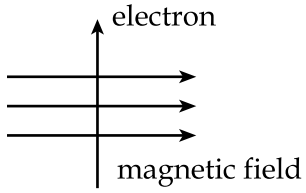
(b) in excess

(iii) Why do you apply paint on iron articles.

25. (a) Explain an activity to show that a current carrying conductor experiences a force when placed in a magnetic field. **5**

(b) State the rule which gives the direction of force acting on the conductor.

(c) An electron moves perpendicular to a magnetic field as shown in the figure. What would be the direction of force experienced on the electron ?



OR

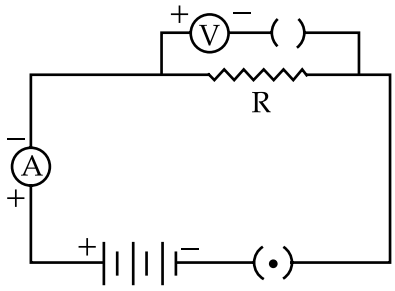
(a) What is a solenoid ?

(b) Draw the pattern of magnetic field formed around a current carrying solenoid. Compare this field to that of a bar magnet.

(c) What happens to the magnetic field when the current through the solenoid is reversed ?

SECTION – B

26. For the circuit arrangement, shown alongside the student would observe. **1**



(a) some reading in both the ammeter and the voltmeter

(b) no reading in either the ammeter or the voltmeter

(c) some reading in the ammeter but no reading in the voltmeter

(d) some reading in the voltmeter but no reading in ammeter

27. Iron fillings were added to a solution of copper sulphate. After 10 minutes, it was observed that the blue colour of the solution has changed and a layer has deposited on iron filings. Which one of the following set of colours correspond to the colour of the solution and the colour of the coating respectively. **1**

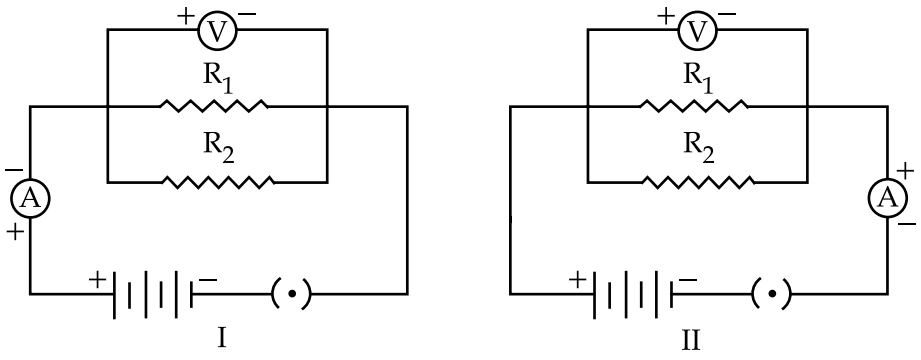
(a) Yellow and green

(b) Brown and blue

(c) Red and greenish blue

(d) Light green and reddish brown.

28. In parallel combination of resistors, two students connected the ammeter in two different ways as shown in given circuits I and II. The ammeter has been correctly connected in : **1**



(a) circuit I only

(b) circuit II only

(c) Both the circuits I and II

(d) Neither of the two circuits

29. Rakshita followed the following procedure for staining the temporary mount of leaf peel on slide. **1**

(I) to put a single drop of stain on leaf peel and wash it with water

(II) to put a single drop of glycerine on leaf peel

(III) cover the leaf peel with coverslip

(IV) observe the slide under microscope.

(a) II, IV, I, III

(b) I, II, III, IV

(c) III, II IV, I

(d) IV, II, I, III

30. Four solutions I, II III and IV were given to a student to test their acidic or basic nature by using pH papers. He observed that the colour of pH paper turned to red, blue, green and orange respectively when dipped in four solutions. **1**

The correct conclusion made by the statement would be

(a) I, II and III are acidic

(b) I and IV are acidic

(c) II, III, and IV are acidic

(d) II and IV are acidic

31. 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 only (b) I and III only

(c) I, III and IV only (d) II, III and IV only

32. Which one of the following is the combination of the relevant materials required for setting up an experiment to show that light is necessary for photosynthesis. **1**

(a) Destarched leaves, stripes of black paper, starch solution and iodine crystal

(b) A potted plant, strips of coloured paper, starch solution, iodine and potassium iodide

(c) Destrached potted plant, strips of black paper, starch solution, potassium iodide.

(d) Destrached potted plant, strips of black paper and iodine solution.

33. The teacher instructed a student to place a healthy potted. Shoe flower plant in a dark room for 24 hours prior to an experiment on photosynthesis. The purpose of placing it in a dark room is **1**

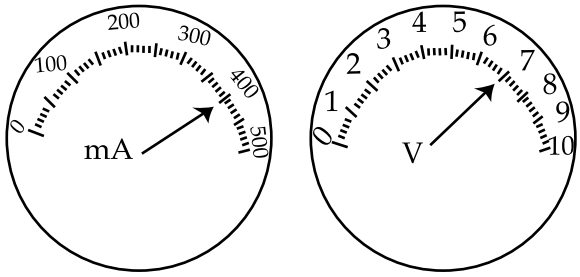
(a) to increase the in take of CO_2

(b) to activate the chloroplasts in leaves

(c) to destarch the leaves

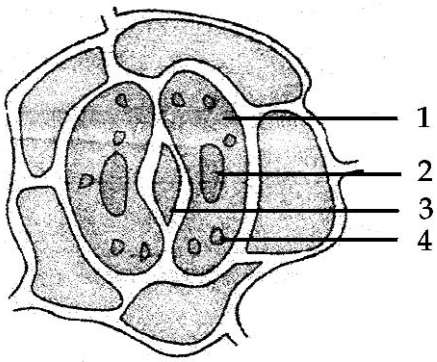
(d) to denature the enzymes in the leaves

34. The current flowing through a conductor and the potential difference across its two ends are as per readings of the ammeter and the voltmeter shown below. The resistance of the conductor would be : **1**



(a) 0.02 Ω (b) 0.24 Ω (c) 20.0 Ω (d) 24.0 Ω

35. A student draws the following sketch of stomatal apparatus and numbers the parts to label them **1**



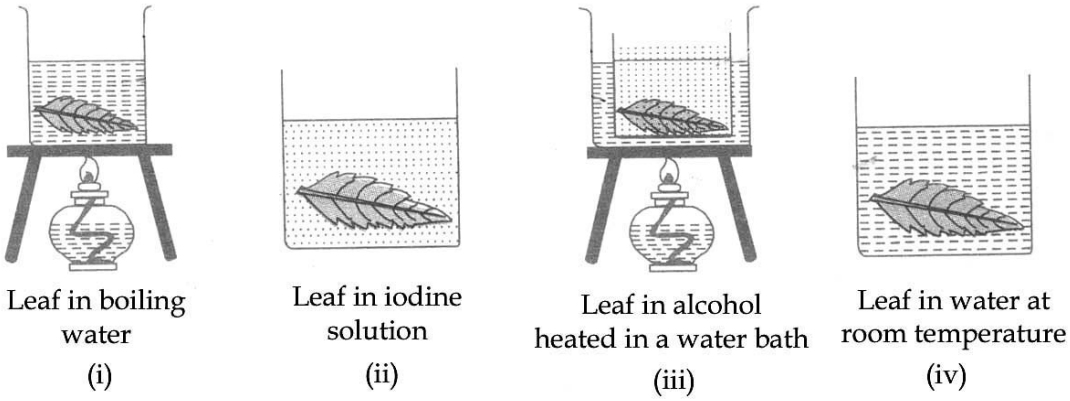
The chloroplast is denoted by

(a) 1 (b) 2 (c) 3 (d) 4

36. A student tested the pH of distilled water using pH paper and observed green colour. After adding a few drops of dilute NaOH solution, the pH was tested again. The colour change now observed would be : **1**

(a) blue (b) green (c) red (d) orange

37. A student performed the starch test on a leaf. Some steps involved are shown below. **1**



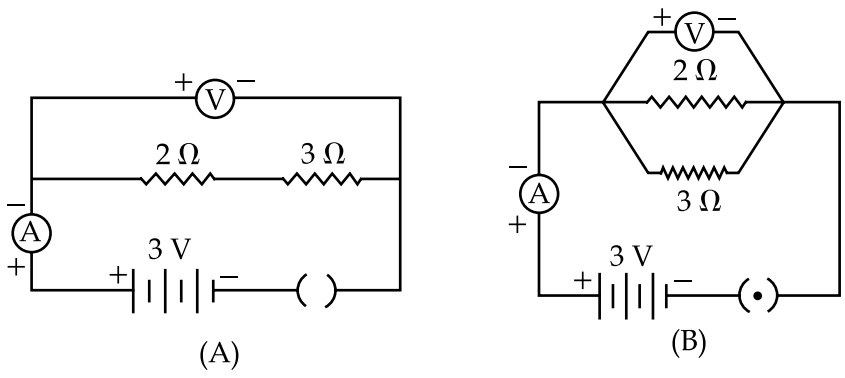
Leaf in boiling water (i) | Leaf in iodine solution (ii) | Leaf in alcohol heated in a water bath (iii) | Leaf in water at room temperature (iv)

The correct sequence of steps should be :

(a) (i), (ii) , (iii), (iv) (b) (iv), (iii), (ii), (i)

(c) (ii), (iii), (iv), (i) (d) (i), (iii), (iv), (ii)

38. For the circuits A and B shown below the voltmeter readings would be **1**



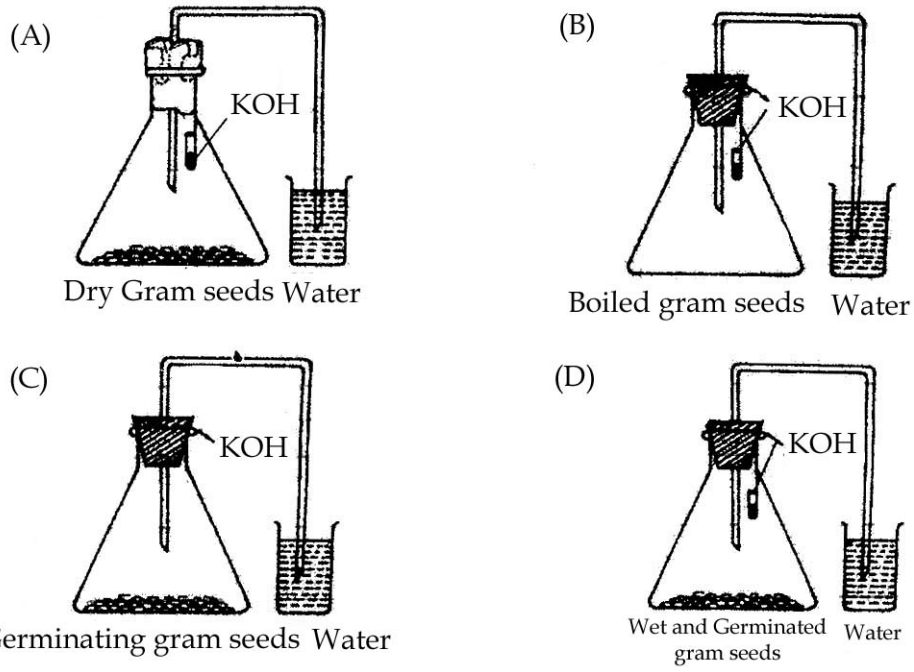
(a) 0.6 V in circuit A and 2.5 V in circuit B

(b) 0 V in both circuits

(c) 3 V in both circuits

(d) 0 V in circuit A and 3 V in circuit B

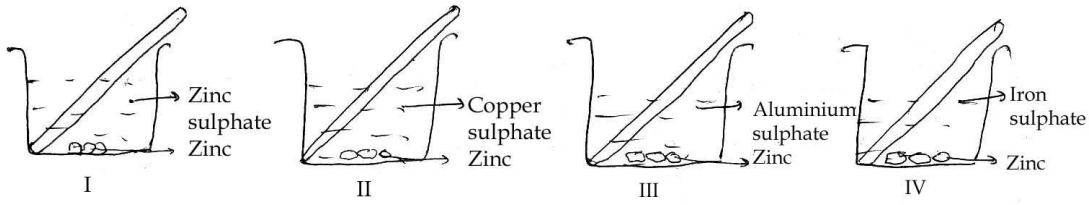
39. Given below are four different set ups to show that CO_2 is released during respiration. **1**



The set up that will give the desired result is

(a) A (b) B (c) C (d) D

40. Zinc granules were added to zinc sulphate, copper sulphate, aluminium sulphate and iron sulphate solutions as shown below. You would observe the deposition of metal on zinc in beakers. **1**



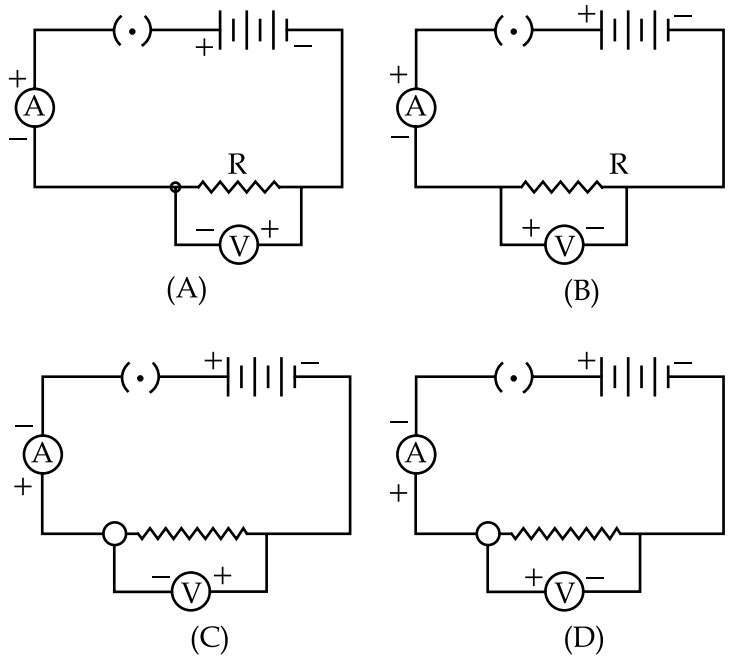
(a) I and III

(b) II and IV

(c) I and II

(d) III and IV

41. Out of the four circuits shown for studying the dependence of the current on the potential difference across a resistor, the correct circuit is **1**



(a) A (b) B (c) C (d) D

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