

# CBSE QUESTION PAPER CLASS-X SCIENCE

SECTION - A

Q.1. Define the term rancidity. *1 mark*

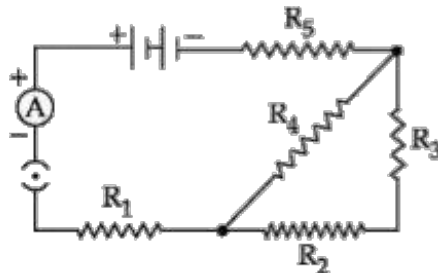
Q.2. What is meant by the statement that the potential difference between two points is 1

volt? *1 mark*

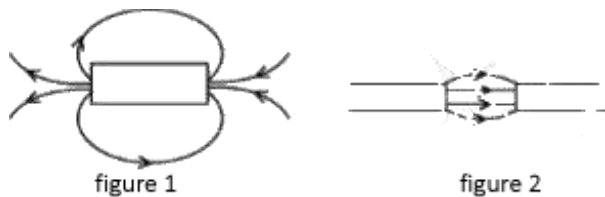
Q.3. List two practical uses of biogas in rural areas. *1 mark*

Q.4. Burning of candle is accompanied by both physical and chemical change. Mention the observations which help to deduce that both physical and chemical changes are taking place. *2 marks*

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



**Q.6. Identify the poles of the magnet in the given figure (1) and (2) 2 marks**

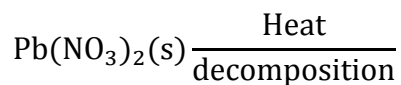
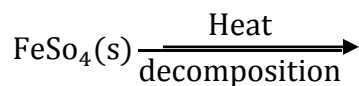


**Q.7. What are villi? What is their function? 2 marks**

**Q.8. (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 step above? Give the equation also. 3 marks**

**Q.9. Complete the following reactions and write the balanced equations: 3 marks**



**Q.10. (i) Write the chemical name and formula of "Plaster of Paris".**

**(ii) How is it prepared?**

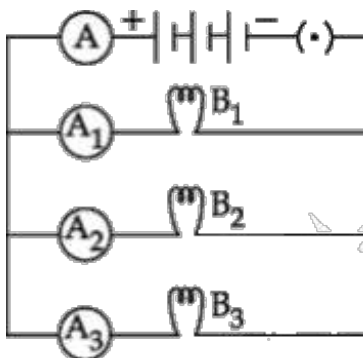
**(iii) Write chemical equations of the reaction. 3 marks**

**Q.11. You are provided with three test tubes A, B, 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 three test tubes? 3 marks**

**Q.12. Give reasons:**

- (i) Ionic compounds have high melting points.
- (ii) Ionic compounds are hard crystalline solids.
- (iii) Ionic compounds dissolve in water. *3 marks*

**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 marks***



- (i) What will happen to the glow of other two bulbs if the bulb  $B_3$  gets fused?
- (ii) If the wattage of each bulb is 1.5 W, how much reading will the ammeter A show when all the three bulb glow simultaneously
- (iii) Find the total resistance of the circuit.

**Q.14. Dams are constructed to generate electricity from water stored at a height. People living in neighbouring areas protested against it to save the flora and fauna.**

- (i) What type of energy is possessed by the stored water?
- (ii) What is the energy transformation that takes place in hydroelectric power plant?
- (iii) What values of the people are shown by this act? (Any two) *3 marks*

**Q.15. Name the physical quantity which is (i) same (ii) different, in all the bulbs when three bulbs of:**

- (a) same wattage are connected in series
- (b) same wattage are connected in parallel
- (c) different wattage are connected in series
- (d) different wattage are connected in parallel *3 marks*

**Q.16. How will the magnetic field produced at a point due to a current carrying circular coil change if we:**

- (a) increase the current flowing through the coil?**
- (b) reverse the direction of current through the coil?**
- (c) increase the number of turns in the coil? *3 marks***

**Q.17. Give a reason to explain why:**

- (i) Adrenaline helps in dealing emergency situations?**
- (ii) Secretions of growth hormone should be specific in the human body?**
- (iii) Some patients of diabetes are treated by giving injections of insulin *3 marks***

**Q.18. (a) The components of an electric circuit are 0.5 m long nichrome wire XY, an ammeter, a voltmeter; four cells of 1.5 V each, rheostat and a plug key. Draw a diagram of the circuit to study the relation between potential difference across the terminals X and Y of the wire and current flowing through it.**

**(b) State the law that relates potential difference across a conductor with the current flowing through it. *3 marks***

**Q.19. Why is it not possible to make use of solar cells to meet all our energy needs? State at least three reasons to support your answer. *3 marks***

**Q.20. (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?**

**Or**

**(a) Five solutions A, B, C, D and E when tested with universal indicator showed pH as 4,1,11,7 and 9 respectively. Which solution is:**

- (i) Neutral?**
- (ii) Strongly alkaline?**
- (iii) Strongly acidic?**
- (iv) Weakly acidic?**
- (v) Weakly alkaline?**

Arrange the pH in increasing order of hydrogen-ion concentration.

(b) Equal lengths of magnesium ribbons are taken in test tubes A and B.

Hydrochloric acid (HCl) is added to test tube A, while acetic acid (CH<sub>3</sub>COOH) is added to test tube B. In which test tube will the fizzing occur more vigorously and why? *5 marks*

**Q.21.** 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.

Or

What are alloys? How are they made? Name the constituents and uses of brass, bronze and solder. *5 marks*

**Q.22.** 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.

Or

(a) State the rule to determine the direction of

(i) Magnetic field produced around a straight conductor carrying current

(ii) Force experienced by 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. *5 marks*

**Q.23. (a) Draw diagram of 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.**

**(c) What function is served by the following:**

- (i) Gastric sphincter**
- (ii) Anal sphincter**

**Or**

**(a) Draw a neat diagram of excretory system of human beings and label the following:**

- (i) Kidney**
- (ii) Ureter**
- (iii) Urinary Bladder**
- (iv) Urethra**

**(b) How is urine produced?**

**(c) Name two excretory products other than  $O_2$  and  $CO_2$  in plants. *5 marks***

**Q.24. (a) (i) Why should we use iodized salt in our diet?**

**(ii) If iodine is insufficient in one's diet, what might be the deficiency disease?**

**(b) How does feedback mechanism regulate the hormone secretion?**

**Or**

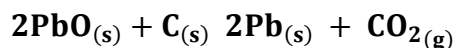
**(a) (i) Which plant hormone is present in greater concentration in the areas of rapid cell division?**

**(ii) Give one example of a plant growth promoter and a plant growth inhibitor**

**(b) What is the role of plant hormone 'cytokinins'? *5 marks***

SECTION - B

**Q.25. Which of the statements about the reaction below are incorrect?**



- (i) Lead is getting reduced.
- (ii) Carbon dioxide is getting oxidised.
- (iii) Carbon is getting oxidised.
- (iv) Lead oxide is getting reduced.

- A. (i) and (ii)
- B. (i) and (iii)
- C. (i), (ii) and (iii)
- D. All *1 mark*

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

- A. Dilute sodium bicarbonate
- B. Tap water
- C. Dilute sodium hydroxide
- D. Dilute hydrochloric acid *1 mark*

**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 *1 mark*

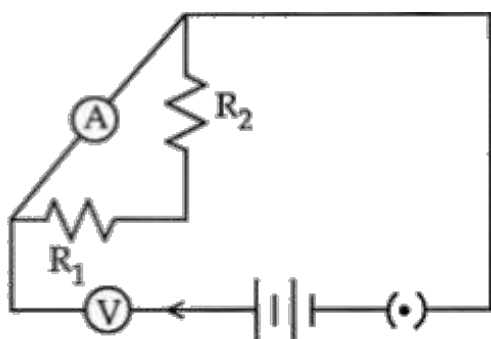
**Q.28. Dil. HCl is added to solid sodium carbonate. It is observed that:**

- A. No change takes place
- B. A loud sound is produced immediately
- C. Immediately a brisk effervescence is produced
- D. The solution turns blue black *1 mark*

**Q.29. Reddish brown deposit observed on iron nails, when these are kept in aqueous solution of copper sulphate solution is that of**

- (a)  $\text{Cu}_2\text{O}$
- (b)  $\text{CuO}$
- (c)  $\text{Cu}$
- (d)  $\text{CuS}$  *1 mark*

**Q.30. 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.**



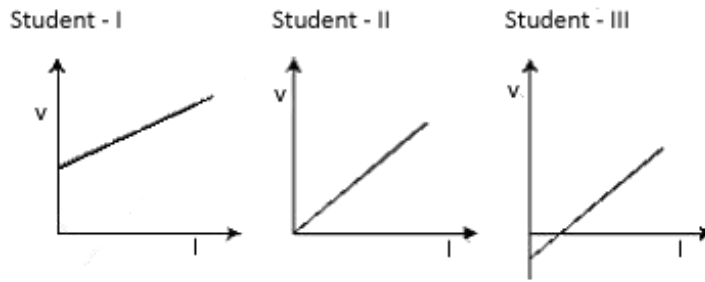
- (i) The resistors  $R_1$  and  $R_2$  have not been correctly connected in series.
- (ii) The voltmeter has not been correctly connected in the circuit.
- (iii) The ammeter has not been correctly connected in the circuit.

**Out 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) *1 mark*

**Q.31. 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 that is likely to be correct is that of:**





- A. Student I only
- B. Student II only
- C. Student III only
- D. All the three students *1 mark*

Q.32. For the circuits shown in figure-1 and figure-2 the ammeter reading would be:

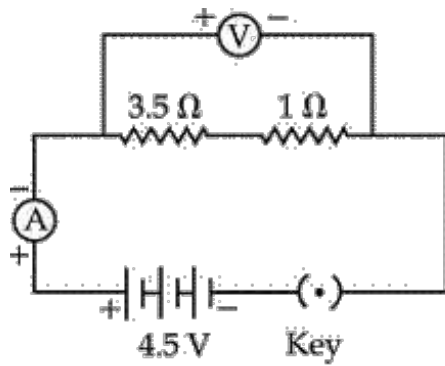


Fig. 1

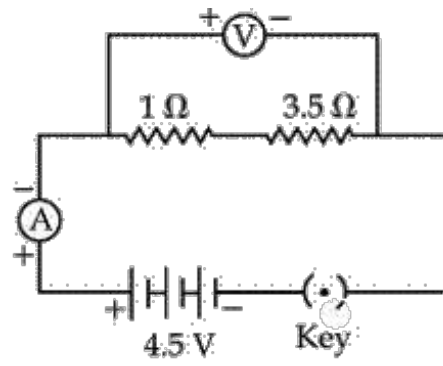
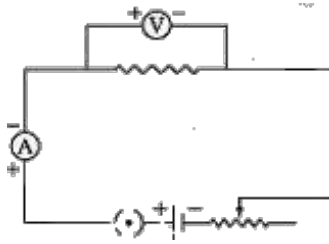


Fig. 2

- A. 1.0A in figure 1 and 0.0A in figure 2
- B. 0.0A in both
- C. 1.0A in both
- D. 1.0A in figure 1 and 1.0A in figure 2 *1 mark*

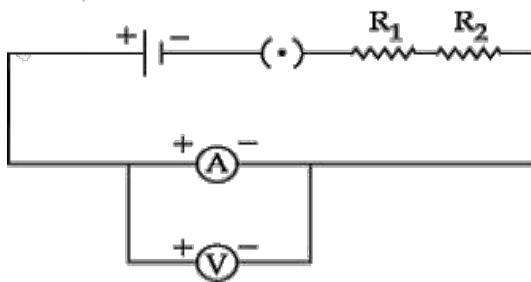
Q.33. The two circuit components shown connected in parallel in the following circuit are:



- A. Rheostat and voltmeter
- B. Voltmeter and resistor
- C. Voltmeter and ammeter
- D. Ammeter and resistor *1 mark*

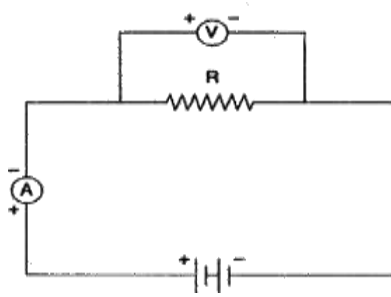
Q.34. To determine the equivalent resistance of a series combination of two resistors  $R_1$  and  $R_2$ , a student arranges the following set up.

Which one of the following statements will be true for this circuit? It gives:



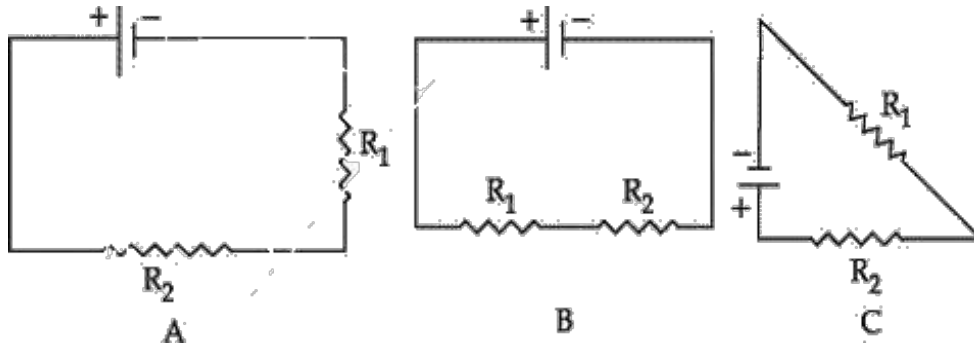
- A. Incorrect reading for both current  $I$  and potential difference  $V$ .
- B. Correct reading for current  $I$ , but incorrect reading for potential difference  $V$ .
- C. Correct reading for potential difference  $V$  but incorrect reading for current  $I$ .
- D. Correct readings for both  $V$  and  $I$ . *1 mark*

Q.35. Which one of the following is correct about the current  $I$  through the circuit and potential difference  $V$  across the resistor  $R$ , if one increases the number of cells in the given circuit?



- A. V will increase, I will decrease
- B. I will increase, V will decrease
- C. Both I and V will increase
- D. Only V will increase and I will remain unchanged. *1 mark*

Q.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 *1 mark*

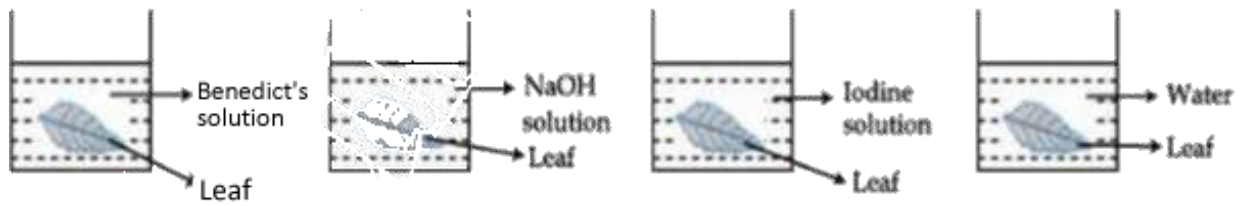
Q.37. A well stained leaf peel preparation when focused under high power of the would show:

- A. Epidermal cells, stomata and guard cells, each with one nucleus and many chloroplasts.
- B. Epidermal cells, stomata and guard cells, each with many nuclei but one chloroplast.
- C. Stomata and guard cells without nuclei or chloroplast.
- D. Stomata but no guard cells or epidermal cells. *1 mark*

Q.38. Out of the following which one is needed to demonstrate that 'Light is essential for photosynthesis'? *1 mark*

- 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.39. Figures A, B, C and D show leaves that has been boiled in alcohol, placed in four beakers containing liquids as labelled.



In which one of the above a positive test for presence of starch would be obtained?

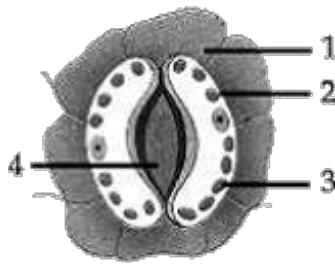
*1 mark*

- A. A
- B. B
- C. C
- D. D

Q.40. A temporary slide of leaf peel is mounted in: *1 mark*

- A. Iodine
- B. Glycerine
- C. Safranin
- D. Methylene blue

Q.41. The following diagram shows the stomatal apparatus as observed in the mounted slide. Its parts have been labelled with numbers. Which number denotes chloroplast?



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

**Q.42. A student set up the apparatus for the experiment to show that CO<sub>2</sub> is released during respiration. After 2 hours, he would observe that: *1 mark***

- A. KOH turns milky
- B. Water level rises in the bent tube in the beaker
- C. Water level decreases in the bent tube in the beaker
- D. Water turns turbid in the beaker