

# Sample Paper

**SUBJECT: SCIENCE**

**MAX. MARKS: 80**

**CLASS: X**

**DURATION: 3 HRS**

## General Instructions

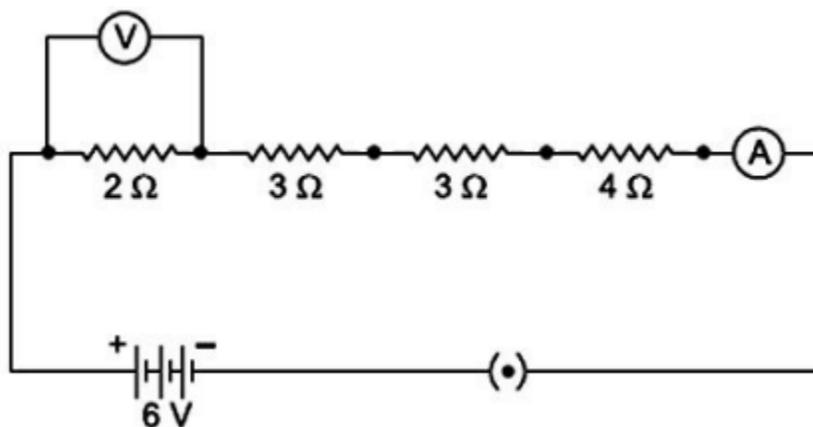
- The question paper comprises two sections A and B. You have to attempt both the sections.
- All questions are compulsory but some questions have internal choice.
- Question number 1 to 2 in section A are one- mark questions. These are to be answered in one sentence or one word.
- Question number 3 to 5 in section A are two- marks questions. These are to be answered in about 30 words each.
- Question numbers 6 to 15 in section A are three marks questions. These are to be answered in about 50 words each.
- Question numbers 16 to 21 in section A are five-mark questions. These are to be answered in about 70 words each.
- Question numbers 22 to 27 in Section B are two- marks based on practical skills. These are to be answered in brief.

## Section-A

1. Define coordination.
2. Name an enzyme secreted from gastric glands in stomach that act on proteins.
3. An element 'M' has atomic number 11.
  - a. Write its electronic configuration.
  - b. State the group to which 'M' belongs.
  - c. Is 'M' a metal or a non-metal?
  - d. Write the formula of its chloride.
4. Explain what causes the wind to blow in equatorial region. What is wind energy?

5. What is the minimum number of rays required for locating the image formed by a concave mirror for an object? Draw a ray diagram to show the formation of a virtual image by a concave mirror.
6. Mrs. Sharma went to the jewelers to buy gold jewelry. She asked the jeweler if the jewelry is made of pure gold. The jeweler assured her that it is 100 % gold and nothing has been mixed in it. Mrs. Sharma was happy and bought the necklace. Answer the following questions based on the above information:
- Was the jeweler right in saying that the necklace is made of 100% gold?
  - What values are promoted by the jeweler?
  - What precautions should you take while purchasing gold jewelry?
7. Answer the following:
- Distinguish between the terms “overloading and short circuiting” as used in domestic circuits.
  - Why are the coils of electric toasters made of an alloy rather than a pure metal?
8. Explain cleansing action of Soap.
9. Write balanced equations for the following, mentioning the type of reaction involved.
- Aluminium + Bromine  $\longrightarrow$  Aluminium Bromide
  - Calcium Carbonate  $\longrightarrow$  Calcium Oxide + Carbon Dioxide
  - Silver Chloride  $\longrightarrow$  Silver + Chlorine
10. What is meant by analogous Organs? Taking a suitable example, explain how they support the theory of organic evolution.
11. There are 5 rooms in a house. Each room has a 100W bulb and a 40W tube light. If every day the bulb is used for 1 hour and tube light is used for 5 hours in each room then what will be the cost of total electric energy consumed in 30 days when 1 unit of electrical energy costs Rs.2.5.
12. What are the components of the transport system in human being? What are the functions of these components?
13. Two compounds ‘A’ and ‘B’ have the same molecular formula  $C_4H_8O_2$ . Compound ‘A’ is an acid and compound ‘B’ has a fruity smell. Suggest
- Chemical Formulae
  - The structural formulae of compounds A and B. Name the functional group of compound B. What name would you give to the relationship between the compounds A and B?

14. Find out the reading of ammeter and voltmeter in the circuit given below:



15. Answer the following questions:

- a. State the chemical Properties on which the following uses of baking soda are based:
  - i. As an antacid
  - ii. As soda-acid fire extinguisher
  - iii. To make bread and cake soft and spongy.

16. How washing soda is obtained from baking soda? Write balanced chemical equation.

17. List three techniques that have been developed to prevent pregnancy. Which one of these techniques is not meant for males? How does the use of these techniques have a direct impact on health and prosperity of a family?

18. How do the guard cells regulate opening and closing of stomatal pores?

19. Answer the following questions:

- a. What are hydrocarbons? Write the general formula of
  - i. Saturated hydrocarbons, and
  - ii. Unsaturated hydrocarbons and draw the structure of one hydrocarbon of each type.
- b. Explain, giving reason, why carbon neither forms  $C^{4+}$  cations nor  $C^{4-}$  anions, but forms covalent compounds which are bad conductors of electricity and have low melting point and low boiling point.

20. Answer the following questions:

- a. Write the functions of each of the following parts of the human eye:
  - i. Cornea

- ii. Iris
- iii. Crystalline Lens
- iv. Ciliary Muscles
- v. Retina

b. A person is unable to see distinctly the objects closer than 1 m. Name the defect of vision he is suffering from. Draw ray diagram to illustrate its correction by suitable lens.

21. Answer the following :

- a. A metal carbonate X on reacting with an acid gives a gas which when passed through a solution Y gives the carbonate back. On the other hand, a gas G that is obtained at anode during electrolysis of brine is passed on dry Y, it gives a compound Z, used for disinfecting drinking water. Identify X, Y, G and Z.
- b. Write the chemical formula of plaster of Paris.

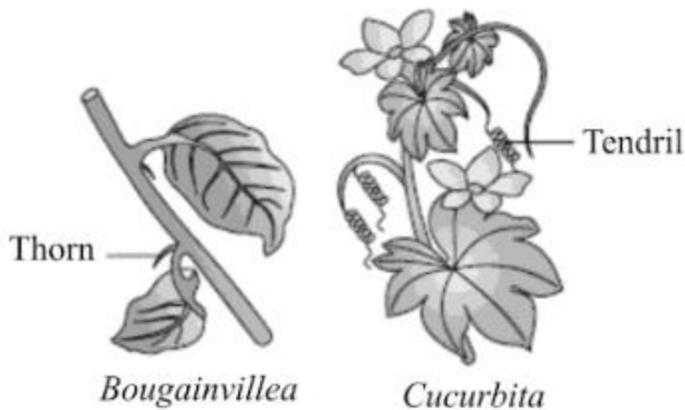
OR

- a. What will be the action of the following substances on litmus paper? Dry HCl gas, moistened  $\text{NH}_3$  gas, lemon juice, carbonated soft drink, curd, soap solution.
- b. A milkman adds a very small of baking soda to fresh milk.
  - i. Why does he shift the pH of the fresh milk from 6 to slightly alkaline?
  - ii. Why does this milk take a long time to set as curd?

22. Describe and explain the variation in blood pressure throughout an individual's circulatory system during a single heartbeat.

## Section -B

23. (i) Sodium hydroxide solution is added to solution A. A white precipitate is formed which is insoluble in excess of sodium hydroxide solution. What is the metal ion present in solution A?
- (ii) When ammonium hydroxide is added to solution B a pale blue precipitate is formed. This pale blue precipitate dissolves in excess of ammonium hydroxide giving an inky blue solution. What is the cation present in solution B?
24. A student after observing the given specimen of plants placed them under the category of homologous organs. On which basis he placed them in this category?



25. In what way is the word AMBULANCE printed in front of the hospital vans? Why is it printed this way?
26. High voltage by itself does not produce electric shock. What does this mean?
27. Name the process by which an amoeba reproduces. Draw the various stages of its reproduction in a proper sequence.

OR

A student is viewing under a microscope a permanent slide showing various stages of asexual reproduction by budding in yeast. Draw diagrams of what he observes. ( in proper sequence)

28. What is observed when a solution of sodium sulphate is added to a solution of barium chloride taken in a test tube? Write equation for the chemical reaction involved and name the type of reaction in this case.