

# CBSE

## Sample Question Paper 1

### Science Class X

Time : 3 hrs

MM : 80

#### **General Instructions**

- (i) The question paper comprises five section – A, B, C, D and E. You are to attempt all the sections.
- (ii) All questions are compulsory.
- (iii) Internal choice is given in section B, C, D and E.
- (iv) Question numbers 1 and 2 Section-A are one mark questions. They are to be answered in one word or in one sentence.
- (v) Question numbers 3 to 5 in Section-B are two marks questions. These are to be answered in about 30 words each.
- (vi) Question numbers 6 to 15 in Section-C are three marks questions. These are to be answered in about 50 words each.
- (vii) Question numbers 16 to 21 in Section-D are 5 marks questions. These are to be answered in about 70 words each.
- (viii) Question numbers 22 to 27 in Section-E are based on practical skills. Each question is a two marks question. These are to be answered in brief.

#### **Section A**

1. How is ozone formed in nature? (1)
2. Name the oxidising and reducing agents in the following .



**Section B**

3. An element 'X' has atomic number 15; (2)
- (a) Write its electronic configuration (b) State the group to which 'X' belongs  
(c) Is 'X' a metal or a non-metal (d) Write the formula of its oxide.
4. Which mirror can give an image of magnification  $-1$ ? Where is the object placed to give this image? (2)
5. Write a balanced chemical equation, when: (2)
- (i) Ferrous sulphate crystals are heated strongly  
(ii) Barium chloride aqueous solution is mixed with sodium sulphate.

OR

Write chemical equations for the reactions taking place when

- (i) Zinc sulphide is heated in air  
(ii) Calcination of zinc carbonate is done.

**Section C**

6. (a) Mineral riches of the earth's crust are either extracted or used. For every ton of metal, a large amount of slag is discarded which damages the environment. What kind of management is needed in this regard? (3)
- (b) Why do you think there should be equitable distribution of resources? What forces would be working against an equitable distribution of resources?
7. In one of the industrial process used for manufacture of sodium hydroxide, a gas 'X' is formed as a by product. The gas 'X' reacts with lime water to give a compound 'Y' which is used as a bleaching agent in chemical industry. Identify 'X' and 'Y' giving chemical equation of the reactions involved. (3)

OR

- (a) What is chlor alkali process? Why is it called so. Write a chemical equation.  
(b) Which by product of chlor alkali process is used for the manufacture of bleaching powder? Write equation.

8. (a) How is walking different from reflex action? (3)
- (b) Kiran's father was feeling thirsty most of the time. He was feeling tired and had excess of urination. Kiran took him to a doctor. Doctor advised him to take artificial sweetener instead of sugar and go for regular walks.
- (i) Which disease is Kiran's father suffering from?
- (ii) State the cause of the disease.
9. (a) Define focus of convex lens.
- (b) Give two differences between real and virtual images. (1+2)
10. (a) State the principle of working of a generator.
- (b) What would be the direction of induced current if the magnetic field is east to west and the conductor moves in it from north to south?
- (c) Suggest any one step that can be taken in a generator to increase the strength of the induced current. (1+1+1)
11. (a) To which wire is fuse connected and how is it connected? Give reason for your answer.
- (b) A device of 2.2 kW power is operated on a voltage supply of 220 V in a circuit that has a fuse rating of 5 A. What result do you expect? Explain. (1½ + 1½)

OR

- (a) Give the energy conversion in an electric motor.
- (b) Draw a diagram of electric motor showing the direction of magnetic field, current and force. (1+2)
12. Describe in brief the changes that uterus undergoes (3)
- (i) To receive the zygote
- (ii) If zygote is not formed
13. (a) With respect to elements of 3<sup>rd</sup> period; name the following : (3)
- (i) Element with smallest size
- (ii) Most reactive metal
- (iii) A Metalloid
- (iv) Most electronegative element
- (b) Atomic size increases down the group of periodic table. Explain

14. (a) Why is vegetative propagation practised for growing some types of plants? (3)
- (b) How is binary fission different from multiple fission?
15. Ram got a biogas plant installed in his backyard. He feeds it with all the household biodegradable waste. The gas produced is used by him for cooking food.
- (a) Give the main component of the gas produced in the biogas plant.
- (b) Why is it considered to be an efficient fuel, give any two reasons.
- (c) What values are shown by Ram? (1+1+1)

OR

Draw a neat diagram of a biogas plant and label:

- (i) inlet of slurry
- (ii) digester
- (iii) gas outlet

### Section D

16. (a) What happens when : (write equations)
- (i) Ethanol reacts with sodium metal.
- (ii) Methane reacts with chlorine in diffused sunlight.
- (iii) Ethanol reacts with methanoic acid.
- (b) Write a chemical test (equation) to distinguish
- (i) Ethanol and ethanoic acid
- (ii) Ethene and ethane. (5)
17. (a) Explain electrolytic refining of copper with a labelled diagram and the reactions taking place at the cathode and anode. (5)
- (b) Write a chemical equation to illustrate the use of aluminium for joining cracked railway lines.
- (c) Write the composition of :
- (i) Brass
- (ii) Solder.

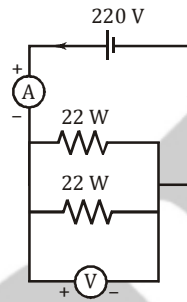
OR

- (a) What are the main two allotropes of carbon? Distinguish these two allotropes on the basis of hardness and electrical conduction.
- (b) Why Aluminium articles have a longer life and attractive finish compared to many other metals?
- (c) Explain the following terms:
- (i) Ore
  - (ii) Gangue
- (d) What is common feature in the electronic configuration of metal atom?
18. (a) Draw a neat diagram of Human Alimentary Canal and label the following parts: (5)
- (i) Structure that stores extra bile juice
  - (ii) Site for complete digestion
- (b) State the significance of HCl released in stomach in digestion.
- (c) What is Lymph? State functions of Lymph.
19. (a) How is the sex of the child determined in human beings? (5)
- (b) What are fossils? How can the age of fossils be determined?

OR

- (a) Draw a neat diagram of human excretory system and label the parts that:
- (i) Produces urine
  - (ii) Releases urine to outside.
- (b) What are the end products of digestion of fat and proteins in human beings?
20. (a) Define dispersion of light.
- (b) Explain the cause of dispersion of light.
- (c) In the spectrum of sunlight, which colour is at the top? Give reason for your answer.
- (d) How can you see a rainbow on a sunny day? What should be the position of sun with respect to the observer? (1+1+1½+1½)

21. (a) What would be the reading of voltmeter and ammeter in the following circuit?



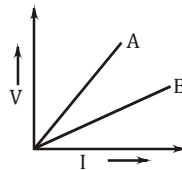
- (b) What would be the total power in the circuit?
- (c) How will the reading of ammeter and voltmeter be affected if one more device of 22W power is added in parallel to the above circuit? (3+1+1)

OR

- (a) A fuse wire melts at 5A .If it is desired that the fuse wire of same material melt at 10 A, then whether the new fuse wire should be of smaller or larger radius than the earlier one? Give reasons for your answer.
- (b) If the radius of a current carrying conductor is halved, how does current through it change?

## Section E

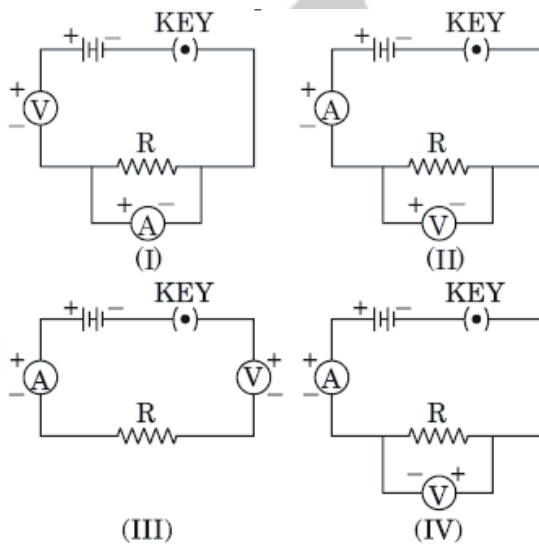
22. (a) State Ohm's law



- (b) Which of the two graphs, A or B, corresponds to higher resistance? (1+1)

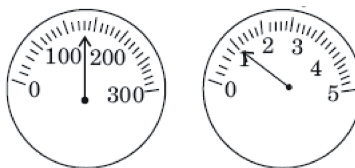
OR

- (a) While performing the experiment on studying the dependence of current ( $I$ ) on the potential difference ( $V$ ) across a resistor, four students I, II, III and IV set up the circuits as shown:



The correct result will be obtained by student:

- (a) I                                  (b) II  
 (c) III                                (d) IV
- (b) The figures given below show the readings of a milliammeter and a voltmeter connected in an electric circuit. Assuming that the instruments do not have any zero error, the current flowing through the circuit and the potential difference across the conductor respectively are



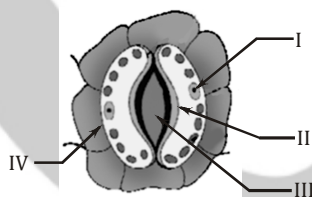
- (a) 160 mA and 1.1 V    (b) 130 mA and 1.2 V  
 (c) 130 mA and 1.1 V    (d) 130 mA and 1.5 V

23. Show angle of deviation in a diagram of refraction of light through a glass prism. (2)
24. Name two salts each of calcium and magnesium which make the water hard. (2)

OR

Fill in the blanks with appropriate words.

- (a) Acetic acid turns \_\_\_\_\_ litmus solution or paper into \_\_\_\_\_.
- (b) Acetic acid is miscible in \_\_\_\_\_ in all proportions and form \_\_\_\_\_ solutions.
25. Write two physical properties of acetic acid. (2)
26. In the following sketch of the stomatal apparatus label the parts I, II, III and IV. (2)



27. Name and define the process of asexual reproduction shown by yeast. (2)

OR

Mention the observations of the process of binary fission in amoeba.