

Answers to this Paper must be written on the paper provided separately. You will not be allowed to write during the first 15 minutes. This time is to be spent in reading the question paper. The time given at the head of this Paper is the time allowed for writing the answers.

Section A is compulsory. Attempt any five questions from Section B. The intended marks for questions or parts of questions are given in brackets.

SECTION A (40 Marks)  
(Attempt all questions from this section)

Question 1

Choose the correct answers to the question from the given options:

[6] 5

- a. A crystalline form of carbon is  
i) Lamp black                      ii) gas carbon                      iii) sugar                      iv) fullerene
- b. Water returns on earth's surface from the atmosphere by the process of:  
i) Combustion                      ii) respiration                      iii) photosynthesis                      iv) condensation
- c. The process of photosynthesis takes place in the presence of  
i) Electricity                      ii) Heat                      iii) Light                      iv) Sound
- d. Water gas is a mixture of  
i) CO and oxygen                      ii) Hydrogen and oxygen                      iii) CO and Hydrogen                      iv) none of these
- e. Temporary hardness of water can be removed by  
i) Filtering                      ii) Boiling these                      iii) Loading                      iv) None of these
- f. The gas produced at anode when electrolysis of water is done is  
i) H<sub>2</sub>                      ii) O<sub>2</sub>                      iii) SO<sub>2</sub>                      iv) None of these

Question 2

State true or false for the given statement:

[6] 4

- a. The reaction of steam with magnesium produces hydrogen gas and magnesium hydroxide.
- b. Burning of fuel in air produces a large amount of energy in the form of heat and light.
- c. Graphite is the purest form of carbon.
- d. An example of colloid is ink.
- e. Hard water forms lather easily with soap.
- f. Coloured diamonds are costlier than colourless and transparent diamonds.

[6]

**Question 3**

**Fill in the blanks:**

- \_\_\_\_\_ is formed when carbon is burnt in a limited supply of air or oxygen.
- \_\_\_\_\_ is present in both living and non-living things.
- \_\_\_\_\_ is the purest form of natural water.
- Hydrogen is \_\_\_\_\_ soluble in water.
- The chemical reaction between hydrogen and chlorine is a \_\_\_\_\_ reaction.
- The tendency of an element to exist in two or more forms but in the same physical state is called \_\_\_\_\_.

**Question 4**

**Match the following:**

- |                                 |                      |
|---------------------------------|----------------------|
| a. Chemical bond                | Rain                 |
| b. Hydrogen                     | conc. Sulphuric acid |
| c. Purest water                 | form of carbon       |
| d. Hygroscopic substance        | Attractive force     |
| e. Wood                         | Hopcolite            |
| f. A mixture of metallic oxides | Lightest gas         |

[6] 6

**Question 5**

**Answer in one word:**

- An insoluble solid produced when two substance in a solution form are mixed together.
- The process in which oxygen is added or hydrogen is removed.
- Name the gas produced when steam is passed over hot coke.
- A mixture of common salt and ice.
- Substance whose atoms or molecules are arranged in a definite pattern.
- Water fit for human consumption.

[6] 6

**Question 6**

**Complete and balance the following chemical equations:**

- $\text{NaCl} + \text{AgNO}_3 \longrightarrow$
- $\text{K} + \text{H}_2\text{O} \longrightarrow$
- $\text{CuO} + \text{CO} \longrightarrow$
- $\text{Ca} + \text{O}_2 \longrightarrow$
- $\text{FeSO}_4 + \text{NaOH} \longrightarrow$

[5] 4

Question 7

Give examples:

(5) 3

- A soluble metallic oxide which produces an alkali.
- Two examples of sources of water.
- Two hydrated substances.
- Two examples of crystalline anhydrous substance.
- A metal which liberates hydrogen only when steam is passed over red hot metal

SECTION B (40 Marks)

(Attempt any five questions from this section)

Question 1

- How will you obtain ammonia from nitrogen? [3]
- What is fire extinguisher? How is it an improvement over the soda acid and foam type fire extinguishers? [5]

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Question 2

- Give 3 difference between cation and anion [3]
- Aquatic plants and animals survive in very cold regions. Give reason. [5]

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Question 3

- What do you observe when blue vitriol is heated? [3]
- Alcohol is mixed with water and is used in car radiators. Give reason. [5]

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Question 4

- What are fullerenes? Name the most common fullerene and how many carbon atoms does it contain? [3]
- Suggest one method along with the reactions for the removal of temporary hardness of water. [5]

Question 5

- Name the chemical required for the preparation of  $\text{CO}_2$  in the laboratory. Also write the balanced chemical equation for it. [3]
- Why is carbon monoxide called the silent killer? [5]

8

Question 6

- State 3 uses of hydrogen [3]
- It is difficult to cook in hills as compared to plains. Give reason. [5]

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