

Attempt all the questions from section I and II. Do not write during the first 15 minutes. intended marks for questions or parts of questions are given in brackets ()

Section I(40marks)

(a) Fill up the blanks with correct choices given in the brackets:

- I. _____ is used in making black shoe polish.
(gas carbon,soot)
- ii. A mixture of 95% O₂ and 5% CO₂ is called
_____ (carbogen,carbonisation)
- iii. Boiling removes the _____ hardness of water.
(permanent ,temporary)
- iv. The formula of Gliber's salt is _____ .10H₂O
(Na₂CO₃ , Na₂SO₄)
- v. _____ introduced anu and paramanu(Dalton, Kanad). (5)

b. Choose the correct answer from the options given below;

- I. The element X has 8 valence electrons .it is _____
1. metal. 2. non metal. 3. metalloid. 4. noble gas
- ii. The K,Land M shells of an atom are full.Its atomic number is _____
1. 18. 2. 10. 3. 12. 4. 20
- iii. _____ is used in lead pencil.
1.wood. 2.graphite. 3.lead. 4.coke.
- iv. The conditions necessary for combustion are _____

1. presence of oxygen. 2. presence of combustible substance. 3. attainment of ignition temperature 4. all the above
- v. A substance which is added to the reactants to increase the rate of reaction is called a _____
1. catalyst. 2. promoter. 3. products. 4. ions
- vi. While preparing ghee from edible oils _____ is used
1. Nitrogen. 2. Hydrogen 3. Oxygen. 4. Carbon
- vii. Hydrogen is used in balloons because it is _____
1. heavier than air. 2. lighter than air.
3. as heavier as air. 4. none of them
- viii. Water has maximum density at _____
1. 0°C . 2. 100°C . 3. 4°C . 4. -4°C
- ix. The sticky substance is formed when soap is added to hard water _____
1. foam. 2. residue. 3. precipitate. 4. scum
- x. Which of these does not form charcoal?
1. sugar. 2. wood. 3. blood 4. bone.

(10)

c. Answer the following:

- i. Draw the atomic structure of $^{23}_{11}\text{Na}$
- ii. State any two features of Dalton's Atomic Theory
- iii 1. What happens when an atom has 8 electrons in its valence shell.
2. Molybdenum is used in the manufacture of ammonia.
Give reason

iv Find the valencies of the radicals in the given compounds

1. $\text{Pb}(\text{NO}_3)_2$
2. $\text{Mg}(\text{OH})_2$

v. 1. Name an acidic gas that react with water to give two acids.

2. Draw the sketch of a tetrahedral carbon molecule as found in diamond.

vi. 1. Carbon forms a large number of compounds why?

2. What happens when carbon dioxide is reacts with red hot coke?

vii . What are the causes of temporary and permanent hardness of water.

viii. .Write the formula of sodium hydride and calcium hydride

ix. 1. From the reaction answer the following questions:



1. Name the substance oxidised.

2. Name the substance reduced.

3. Name the oxidising agent.

4. Name the reducing agent.

x. What is the difference between 2O and O_2 . (20).

d. Match the following metals with:

1. Ca _____ steam

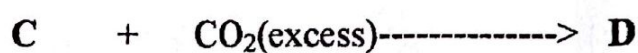
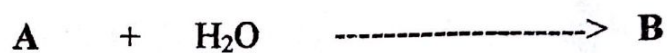
2. Fe _____ boiling water

- | | | | | |
|----|----|----|------------|-----|
| 3. | Al | -- | cold water | |
| 4. | Mg | -- | alkali | |
| 5. | Zn | -- | dil. acid | (5) |

Section II(carries 40 marks)

Question 1.

1. Identify A,B,C and D and balance the equations:



2. Define

- a. Catenation. b. Adsorption

3. Give an example of each of the following chemical change:

a. A reaction involving the formation of dirty green precipitate

b. A photochemical reaction.

4. What do you observe when

a. Hydrogen sulphide gas is passed through

Copper(II)Sulphate solution

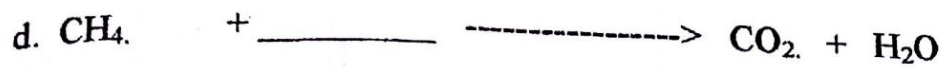
b. Ammonia gas is mixed with Hydrogen chloride gas.

5. Write the chemical formulae of :

- a. vinegar. b. lime stone. c. benzene. d. butane
 e. oxalic acid. f. ethyl alcohol. g. calcium carbide
 h. methane.

Question 2.

1. Complete and balance



2. Give reason:

- It takes more time to cook food at mountain.
- A lot of effervescence take place when a soda water bottle is opened

3.a. How does fishes and aquatic animals survive when the pond gets covered with thick ice.

b. Differentiate between Deliquescent and efflorescent substances

4. Name the following:

- The gas that produced at anode during the electrolysis of acidulated water.
- An element which does not contain neutron.
- The metal which Rutherford selected for his alpha scattering experiment
- The chemical name and formula of white vitriol

5. Give two examples each for drying agents and colloids.

(10)

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Question 3

1. Why do $^{35}\text{Cl}_{17}$ and $^{37}\text{Cl}_{17}$ have the same chemical properties?

In what respect do these atom differ?

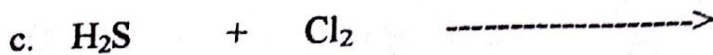
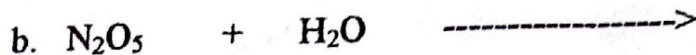
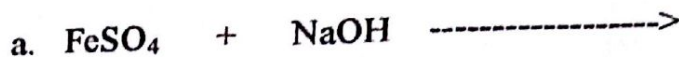
2. How does cathode rays differ from anode rays?

3. What do you understand by term valency? write the valency of



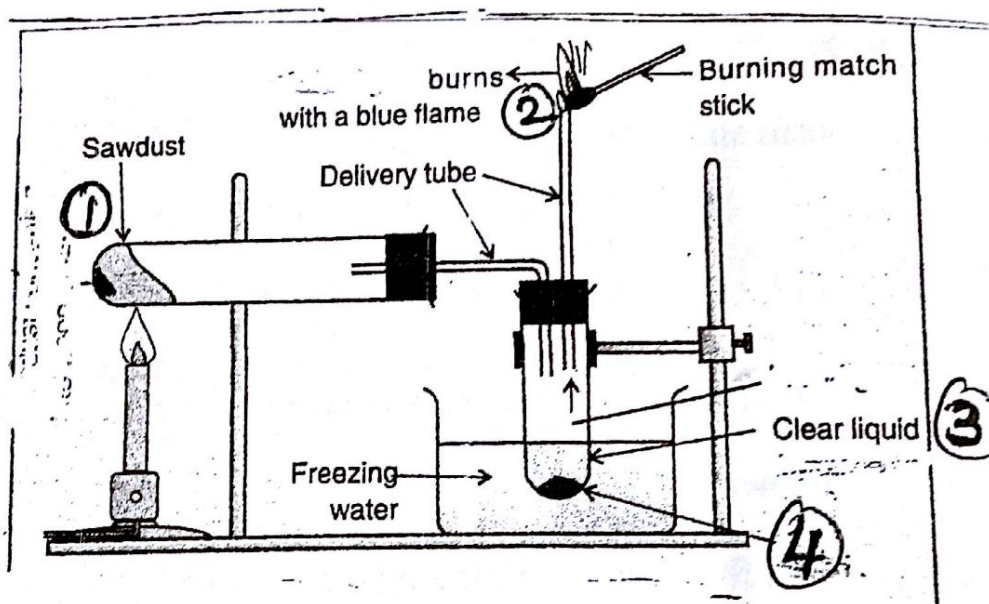
4. Why was Rutherford's model of atom not accepted? Explain.

5. Complete and balance the following chemical equations:



Question 4

1. Study the diagram given below and answer the questions:



a. What does the diagram show?

b. What is the product coming out through no. (2)

c. What is no. 3 and no. 4

d. What will be left in the boiling tube in the end?

2. Draw a flow chart to show the allotropes of carbon.

3. Give reason

a. It is dangerous to sleep in a closed room with coal burning in it.

b. Carbon dioxide is effective for fire fighting. why?

4. Name the substance

a. It act as a lubricant for machine parts

b. it is formed when carbon burns insufficient oxygen

c. It is used in cutting tools and rock cutting drills.

d. It used in the manufacture of printers ink.

5. Mention two factors on which the value of diamond depends.
