

GREENLAWNS SCHOOL, WORLI
FINAL EXAMINATION: 2023-24
CHEMISTRY

Std: VIII

Marks: 80

Date: 22/02/2024

Time: 2 hrs

You will **not** be allowed to write during the first **10** 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.

I A) Select the correct answers to the questions from the given options. [10]
(Do not copy the question. Write the correct answer only):

1) Any atom or a group of atoms carrying a positive or negative charge due to loss or gain of electrons is called:

- | | |
|--------------|-------------|
| (a) Atom | (c) Ion |
| (b) Molecule | (d) Radical |

2) A substance / compound which alters the rate of the reaction is:

- | | |
|--------------|--------------|
| (a) Promoter | (c) Reactant |
| (b) Catalyst | (d) Product |

3) An example of a deliquescent substance is:

- | | |
|------------------------------------|-----------------------------------|
| (a) CaO | (c) P ₂ O ₅ |
| (b) H ₂ SO ₄ | (d) FeCl ₃ |

4) Diamond, graphite and fullerenes are:

- | | |
|-----------------|--------------------------|
| (a) Adsorbants | (c) Allotropes of carbon |
| (b) Crystalline | (d) Both (b) and (c) |

5) The catalyst used in hydrogenation of oils is:

- | | |
|--------------|----------|
| (a) Nickel | (c) Iron |
| (b) Platinum | (d) Zinc |

6) Tyndall effect is visible in:

- | | |
|------------------------|----------------|
| (a) True solution | (c) Suspension |
| (b) Colloidal solution | (d) Emulsion |

7) Temporary hardness in water is due to presence of:

- | | |
|----------------------------|-----------------------------|
| (a) Bisulphates of Ca & Mg | (c) Bicarbonates of Ca & Mg |
| (b) Chlorides of Ca & Mg | (d) Sulphates of Ca & Mg |

8) A metal below iron but above copper in the metal activity series which has no reaction with water is:

- | | |
|---------------|-------------|
| (a) Zinc | (c) Lead |
| (b) Magnesium | (d) Mercury |

9) A radical containing nitrogen and hydrogen only:

- (a) Ammonium (c) Dichromate
(b) Aluminate (d) Zincate

10) An example of amphoteric hydroxide is:

- (a) NaOH (c) Cu(OH)₂
(b) NH₄OH (d) Al(OH)₃

B) Identify the types of reactions **A** to **E**, by matching them with the reactions (1) to (5): [5]

- A:** Displacement reaction **B:** Thermal dissociation **C:** Synthesis reaction
D: Double decomposition reaction **E:** Photochemical reaction

- 1) $4\text{AgBr} \longrightarrow 2\text{Ag}_2\text{Br} + \text{Br}_2$
2) $\text{Mg} + 2\text{HCl} \longrightarrow \text{MgCl}_2 + \text{H}_2$
3) $\text{KOH} + \text{HCl} \longrightarrow \text{KCl} + \text{H}_2\text{O}$
4) $\text{NH}_4\text{Cl} \rightleftharpoons \text{NH}_3 + \text{HCl}$
5) $\text{CO}_2 + \text{H}_2\text{O} \longrightarrow \text{H}_2\text{CO}_3$

C) Match the names of compounds in 'Column A' with their correct formulas from 'Column B'. [5]

Column A

- 1) Iron (III) chloride
2) Iron (III) oxide
3) Iron (II) chloride
4) Iron (III) sulphate
5) Iron (III) sulphide

Column B

- A: FeCl₂ G: FeSO₄
B: Fe₃O₄ H: Fe₂S₃
C: Fe₂O₃ I: FeCl
D: FeCl₃ J: FeS₂
E: FeO K: Fe₂(SO₄)₃
F: FeS

D) Explain the following terms: [5]

- 1) Bone charcoal 4) Valency
2) Hygroscopic substances 5) Endothermic reaction
3) Promoter

E) Distinguish between the following pairs on the basis of the points given in the brackets: [5]

- 1) Suspension and colloidal solution (size of solute particles)
2) Lampblack and coke (preparation)
3) Promoter and catalyst (an example)
4) Sulphite and bisulphite (valency)
5) Pure hydrogen and Hydrogen-air mixture (test)

F) Give reasons for the following: [5]

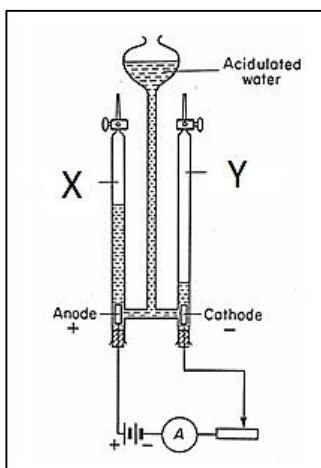
- 1) Hydrogen is not collected over air, even though it is lighter than air.
2) Pressure and temperature influence the solubility of gases in water.
3) Carbon monoxide is a highly poisonous gas.

- 4) Copper exhibits variable valency.
- 5) The lower end of the thistle funnel is dipped below the level of the acid during the laboratory preparation of Hydrogen gas.

G) Give balanced chemical equations for the following: [5]

- 1) Preparation of hydrogen gas using lead and Sodium hydroxide.
- 2) Thermal decomposition of Calcium carbonate.
- 3) Removal of temporary hardness in water.
- 4) Laboratory preparation of Carbon monoxide.
- 5) Reaction of Calcium with cold water.

II A) The apparatus below is Hoffman's voltameter used for electrolysis of acidified water.



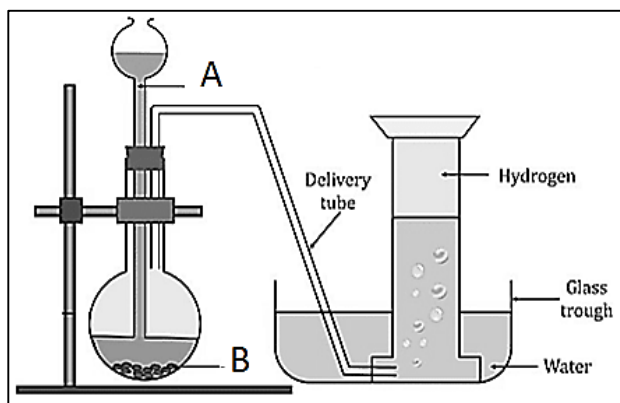
- 1) Why is distilled water not used in the experiment? [1]
- 2) Identify the gases 'X' and 'Y'. [1]
- 3) Give an equation for the reaction taking place. [1]
- 4) Define electrolysis. [2]

B) Complete and balance the following equations: [3]

- 1) $\text{PbO} + \text{H}_2 \rightarrow \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$
- 2) $\text{SO}_3 + \text{H}_2\text{O} \rightarrow \underline{\hspace{2cm}}$
- 3) $\text{CO} + \text{O}_2 \rightarrow \underline{\hspace{2cm}}$

C) What are dehydrating agents? Give an equation to show the action of a dehydrating agent on glucose. [2]

III A) The set-up below represents the laboratory preparation of hydrogen gas: [4]

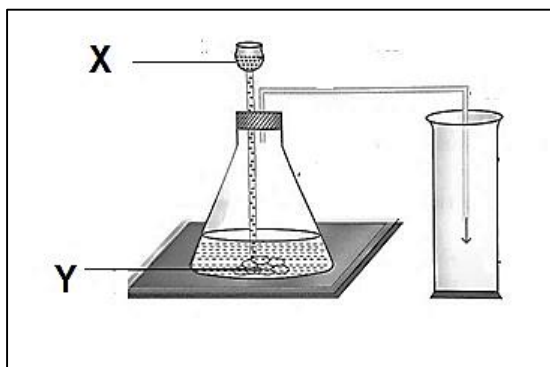


- 1) Identify the chemicals 'A' and 'B'.
- 2) Give a balanced chemical equation for the reaction taking place.
- 3) Why cannot dilute nitric acid be used in the preparation?
- 4) What is the method of collection of hydrogen gas?

B) What are the two types of double decomposition reaction? [3]
Give an equation for each case.

C) What are the conditions affecting solubility of a solute in a solvent? [3]

IV A) The figure below represents laboratory method of preparation of carbon dioxide.



- 1) Identify the chemicals X and Y. [1]
- 2) Give a balanced chemical equation for the preparation. [1]
- 3) What is the method of collection of gas? [1]
- 4) Justify the above answer. [2]
- 5) How is the gas purified? [2]

B) What is a super saturated solution? How is it prepared? [3]

V A) Balance the following chemical equations: [3]

- 1) $\text{Cu} + \text{H}_2\text{SO}_4 \rightarrow \text{CuSO}_4 + \text{H}_2\text{O} + \text{SO}_2$
- 2) $\text{Mg}_3\text{N}_2 + \text{H}_2\text{O} \rightarrow \text{Mg}(\text{OH})_2 + \text{NH}_3$
- 3) $\text{MnO}_2 + \text{HCl} \rightarrow \text{MnCl}_2 + \text{H}_2\text{O} + \text{Cl}_2$

B) A chemical reaction is often accompanied by external indications. Give one equation where a chemical reaction is accompanied by: [3]

- 1) Change of colour
- 2) Evolution of a gas
- 3) Evolution of heat

C) Give equations for industrial method of preparation of hydrogen gas by Bosch process. [2]

D) Why is water called a 'Universal solvent'? [2]
