



Time : 2hrs

Q1. A) Fill in the blanks.

- When acidulated water is electrolysed hydrogen collects at the cathode (union) ^[5]
- Hydrogen forms ionic bonds with strongly reactive elements.
- A cation is a positively charged ions.
- The atomic number of an element is equal to the number of protons.
- The combining capacity of an element known as valency.

B) Choose the correct option.

- Which of the following elements is electronegative .
(a) Sodium (b) Oxygen (c) Magnesium (d) Calcium [5]
- Cathode rays are beams of -
(a) A particles (b) Electrons (c) Protons (d) Neutrons
- At what temperature water Co-exist in all three state-
(a) 0°C (b) 4°C (c) 50°C (d) 100°C
- Which of the following water pollution. Causes Eutrophication?
(a) Oil Spills (b) Industrial waste (c) Detergents (d) Household Solid waste
- The metal oxide which can not be reduced by-hydrogen is.
(a) pbo (b) Cuo (c) Cao (d) Feo

C) Copy and complete the table given below.

[12]

	No. of proton	No. of electron	No. of Neutron	At. No.	Mass No.	No. of Nucleons
$^{37}_{17}\text{Cl}$	17	17	18	17	1	34
$^{40}_{20}\text{Cl}$	20	20	20	20	0	40

D) True/ False rewrite the statement if it is wrong.

[8]

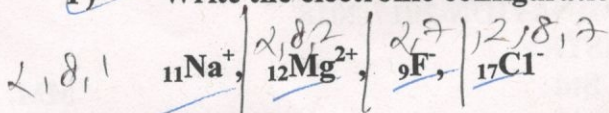
- A hydrate does not lose water on heating. T
- ice, being a solid ,sinks in water. F
- ^{12}C and ^{13}C are isotopes. T
- An oxygen atom gains two electrons to attain the octet. T
- Helium being a noble gas, has eight electrons in its valence shell. T
- Hydrogen gas is easily liquefiable. F
- The reaction between hydrogen and oxygen is exothermic. T
- The temperature of ice rises in the process of melting. F

E) Match the items in column A with those of B.

[6]

- | A | B |
|--------------------|--|
| (a) Washing soda | 1. $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$ |
| (b) Green vitriol | 2. $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$ |
| (c) Blue Vitriol | 3. $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ |
| (d) Epsom salt | 4. $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ |
| (e) White Vitriol | 5. $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$ |
| (f) Glauber's salt | 6. $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ |

F) Write the electronic configuration of the following species. [4]



G) Explain why- [10]

- Boiled water tastes flat.
- Ice at Zero degree centigrade gives more cooling effect than water at 0°C .
- Rain water does not leave concentric rings when boiled.
- Air dissolved in water contains a higher percentage of oxygen.
- If distilled water is kept in a sealed bottle for a long time. It leaves etching on the surface of the glass.

SECTION-B

(Attempt any four question)

- Q2. (a) Give three arguments to prove that water is a chemical compound. [4]
(b) Explain how a chemical equilibrium is attained. [4]
(c) How is aquatic life benefitted by the fact that water has a maximum density at 4°C ? [4½]

- Q3. (a) Give the difference. [4]
1. Atomic number / mass number
2. Ionic bond / Covalent bond

(b) Which is the heaviest isotope of hydrogen protium, deuterium or tritium? [4]
Explain with the help of diagram.

- (c) Write down- [4½]
1. The mass number of the atom having 20 neutrons and 15 protons.
2. The number of neutrons in the nucleus of an atom having atomic number 17 and mass number 37.

- Q4. (a) Define the terms- [4]
1. Octet rule 2. Valency 3. Electronic configuration 4. Nuclide symbol

- (b) Match the atomic number 4, 14, 8, 15 and 19 with each of the following- [4]
1. A solid non metal of valency 3
2. A gas of valency 2
3. A metal of valency 1
4. A non metal of valency 4

- (c) Elements x, y, z have atomic number 6, 9, 12 respectively which one. [4½]
1. form an anion
2. form a cation
3. has four electrons in the valence shell.

- Q5. (a) Define the following terms. [4]
1. Saturated solution 2. Water of crystallisation 3. Latent heat of fusion
4. High latent heat of vaporisation

(b) What do you mean by the polluted water? What are the main cause of water pollution? [4]
(c) What is the biological importance of dissolved air in the water? [4½]

- Q6. (a) What is the test for hydrogen gas? [4]
(b) What is the activity series of metals? [4]
(c) Which metal is preferred for collecting hydrogen from- [4½]
1. Cold water
2. Hot water
3. Steam.

Write balanced equation for each.