

MAR THOMA RESIDENTIAL SCHOOL, TIRUVALLA
ANNUAL EXAMINATION- FEBRUARY 2019

CHEMISTRY

CLASS: 9

SECTION A

MARKS: 80
TIME: 2 hr

QUESTION 1

(a) Select the correct word from the list given in the bracket: [5]

1. The formula of sulphate ion. (SO_4^{2-} , SO_3^{2-})
2. A reaction in which a substance break down into two or more substance. (Synthesis, Decomposition)
3. Hardness that cannot be removed by boiling. (Temporary, Permanent)
4. The reactive metal among the two in activity series. (Magnesium, Iron)
5. Gas that cause greenhouse effect. (Ammonia, Methane)

(b) Give the names of the following [5]

1. The decrease in the amount of ozone in the stratosphere
2. The law that gives relation between pressure and volume
3. The process in which an atom or ion loses electron
4. A gas used as a reducing agent
5. An element whose outermost shell has 8 electrons

(c) Write down the word that will correctly complete the following statements

1. The horizontal rows in the periodic table are called -----
2. An alkali metal in period 2 is -----
3. ----- isotope is used in radiotherapy.
4. ----- is used as a drying and a dehydrating agent.
5. Symbolic expression for a molecule is called -----

(d) Define the following :

1. Atomic mass unit
2. Solubility
3. Typical elements
4. Covalent molecule
5. Aqueous tension

[5]

(e) What do you observe :

1. Carbon dioxide is passed through the lime water
2. Dilute sulphuric acid is added to zinc
3. Sodium is added to water
4. Heating sodium chloride crystals
5. Barium chloride solution is added to sodium sulphate solution

[5]

(f) Give two differences between :

1. Covalency and electrovalency
2. Deliquescence and efflorescence
3. Daltons and modern atomic theory

[6]

(g) Give reasons for the following

1. Inhalation of carbon monoxide leads to death
2. Hot air is filled into balloons which are used for meteorological purposes
3. Inflating a balloon does not violate Boyle's law
4. Gases have low density than solids
5. $^{35}_{17}\text{Cl}$ and $^{37}_{17}\text{Cl}$ do not differ in their chemical reactions
6. Nitric acid is not used in the laboratory preparation of hydrogen

[6]

(h) 50cm^3 of hydrogen is collected over water at 17°C and 750 mm Hg pressure. Calculate the volume of dry gas at STP if water vapour pressure at 17°C is 14mmHg

[3]

SECTION B

QUESTION 2

- a) Calculate the percentage of nitrogen in ammonium carbonate
[N=14, H=1, C=12, O=16] [2]
- b) Define double decomposition reaction. What do you observe when ammonium dichromate is heated? Give relevant equation [3]
- c) Balance the following word equation [2]
Potassium permanganate + Hydrochloric acid → Potassium chloride + Manganese (II) chloride + water + chlorine
- d) What is acid rain? What is its impact on soil and humans [3]

QUESTION 3

- a) State Newlands law of octaves? [1]
- b) What are isobars? Give an example [1]
- c) What do you mean by crystallization? Name a crystalline substance which does not contain water of crystallization? [2]
- d) What are halogens? Where do they lie in the periodic table. Name them [2]
- e) Define ionic compound? Name a compound which is most ionic [2]
- f) Give two similarities between hydrogen and halogens [2]

QUESTION 4

- a) A gas occupies 600cm^3 under a pressure of 700mmHg . Find under what pressure the volume of the gas will be reduced by 20 per cent of its original volume. Temperature remaining constant. State the law behind this [3]
- b) Why do we need STP? [1]
- c) Why are zinc granules preferred over pure zinc in the laboratory preparation of hydrogen. [1]
- d) Why is hard water unfit for washing purposes? [1]
- e) How does metallic character vary across a period and down a group? Name the metalloid in period 2 [2]
- f) When a bottle of perfume is opened, the smell of it reaches everywhere. Name the process and state it [2]

QUESTION 5

- a) What is global warming? What are the ways of reducing global warming [2]
- b) Draw the electron dot diagram of the formation of magnesium oxide [2]
[Mg =12, O=8]
- c) Element P has atomic number 20. To which group and period does it lie
Predict its property
- d) Calculate the volume occupied by 2g of hydrogen at 27°C and 4 atm [2]
Pressure ,If at STP it occupies 22.4L
- e) What are representative elements? [3]
[1]