

MAR THOMA RESIDENTIAL SCHOOL TIRUVALLA
SECOND TERMINAL EXAMINATION

CHEMISTRY

[Answer all questions in section I and section II]

SECTION I

21-12
STD IX

MARKS 80

TIME 2HRS

QUESTION I

1. Write the equation for the following and balance them;

a. Zinc reacted with hot and conc. Sodium hydroxide solution.

b. Aluminium boiled with hot and dilute NaOH solution.

c. Red hot iron reacted with steam.

d. Iron reacted with dilute hydrochloric acid

e. Sodium react with oxygen in the air.

(5)

2. Name the following ;

a. Inert gas of second period.

b. The law which gives relationship between absolute temperature and volume at constant pressure.

c. A gas which act as an oxidising agent and reduing agent.

d. The most reactive halogen.

e. The group which has elements with valence electrons one.

(5)

c. Match the column A with coumn B

column A

column B

1. Elements at the bottom of the
Periodic table.

A. Hydrogen

2. An alkali metal

B. Bromine

3. An element without neutron

C. Rubidium

4. A liquid non metal

D. Carbon

5. An element which has 4 electrons in the valence shell.

E. Lanthanides

d. An atom of an element X has 3 electrons in the M shell.

(5)

1. State its electronic configuration.

2. Is it a metal or a non-metal.

3. State the number of protons in X.

4. Write the formula of its chloride.

5. State the group number and period number.

e. Define/ state

(5)

1. Boyle's law.

2. Absolute zero.

3. Modern periodic law.

F. Give reasons:

(6)

1. Sodium is kept in kerosene.

2. Argon is used to fill light bulbs.

3. Mountaineers have to carry oxygen cylinders.

4. Inert gases do not react.

g. Choose the correct option given in the bracket to complete the sentences.

(4)

1. Moving from left to right in the second period number of valence electrons _____ . (decreases, increases, remain the same.)

2. Removal of electropositive ion is an _____ (oxidation, reduction, redox reaction.)

3. Sodium _____ (metal, amalgam, molten) reacts smoothly with cold water.

4. If temperature is reduced to half _____ (pressure, volume) would also reduce to half.

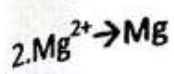
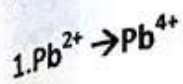
5. Separation of hydrogen from CO_2 is achieved by passing the mixture through _____ (ammoniacal CuCl , caustic potash solution, Lead nitrate solution) (5)

h. Convert

1). 373 K to degree celcius.

2). 37°C to Kelvin scale. (2)

i. State the following reactions as oxidation or reduction;



j. Name the elements of period 2. (1)

SECTION II

QUESTION 2

1. Write any two similarities between Hydrogen and Halogens. (2)

2. Give reasons for the following:

a. The cause of periodicity .

b. Gases have low density. (2)

3. What is the advantage of Kelvin scale of temperature? (2)

4. Define Typical elements? (2)

5. At a pressure of 2 atmospheres a gas has a volume of 400 cc. What volume will it occupy at a pressure of 6 atmospheres if the temperature remains constant? (2)

QUESTION 3

1. What is gas equation? Derive it? (2)

2. What is the volume occupied by 1 litre of CO_2 at 27°C and 700 mm of Hg at STP? (2)

3. In the Lab preparation of H_2 ,

1. Zn granules are preferred over pure Zn. Why? Why is it collected by the downward

displacement of water? How is H_2S removed? Write its equation? Which acids are not used in the preparation? Write any one precaution taken in the preparation of hydrogen?

QUESTION 4

1. Fill in the blanks:

a. Modern periodic table has _____ vertical column.

b. Mg and Mn are the only metals that react with very dilute _____ acid to liberate hydrogen.

c. Reactivity of metals _____ down the group.

d. Strontium imparts _____ colour to the flame.

e. Elements of sub group A, i.e. IA to VIIA are known as _____ elements.

2. a. Derive Charles law equation?

b. 200 cc of a gas is collected at $30^{\circ}C$ and 760 mm Hg pressure. If the volume of the gas is reduced to half at the same pressure to what temperature should it be cooled?

3. What are amphoteric oxides and hydroxides? Write equation for the reaction of an Amphoteric oxide with NaOH?

QUESTION 5

1. Name all the alkaline earth metals? Why are they called so?

2. Write equations in the manufacture of H_2 ?

3. $PbO + CO \rightarrow Pb + CO_2$. In this reaction which substance is getting reduced? Give its reason?

4. What temperature would be necessary to double the volume of a gas initially at s.t.p if the pressure is reduced by 20%?

5. What is a reducing agent? Give an example of a solid reducing agent?
