

GREENLAWNS HIGH SCHOOL

SUBJECT : CHEMISTRY EXAMINATION

STD : 10

MARKS : 60

TIME : 1.5 HOURS

You will not be allowed to write for the first 10 minutes. This time is to be spent in reading the question paper. Answers to be written on the paper provided separately

Section A is compulsory, solve all questions

Section B has 4 questions solve any 3

SECTION A

QUESTION 1

Choose one correct option from the given options

Write only the alphabet

(8)

- i) On moving from left to right across the period of the periodic table the atomic size
- a) Decreases
  - b) Increases
  - c) Remains the same
  - d) Sometimes increase and sometimes decreases
- ii) Molecule containing triple covalent bond is
- a) Ammonia
  - b) Water
  - c) Methane
  - d) Nitrogen
- iii) Which one of the following will not produce an acid when made to react with water
- a) Carbon dioxide
  - b) Sulphur dioxide
  - c) Carbon monoxide
  - d) Nitrogen dioxide
- iv) Hydroxide of which metal is soluble in sodium hydroxide solution
- a) Magnesium
  - b) silver
  - c) Lead
  - d) Copper

v) Which is a non electrolyte

- a) Acetic acid
- b) Carbon tetra chloride
- c) Sodium hydroxide solution
- d) Potassium chloride solution

vi) Vessel in which electrolysis lead bromide is carried out

- a) Clay
- b) Glass vessel
- c) Silica
- d) Aluminium

vii) Nitrate which leaves no residue

- a) Sodium nitrate
- b) Ammonium nitrate
- c) Calcium nitrate
- d) Mercuric nitrate

viii) Corrosive action of sulphuric acid on skin is due to

- a) Exothermic nature
- b) Volatile nature
- c) Dehydrating nature
- d) Oxidizing nature

## QUESTION 2

(i) Match the following

- |                 |                    |
|-----------------|--------------------|
| a) acid salt    | alum               |
| b) double salt  | sodium bicarbonate |
| c) complex salt | sodium carbonate   |
| d) normal salt  | bleaching powder   |
| e) mixed salt   | sodium zincate     |

(5)

## SECTION 2

### SOLVE ANY 3 FROM THE GIVEN 4 QUESTIONS

#### QUESTION 3

i) Using sulphuric acid produce (3)

a) A pungent smelling acidic gas

b) A white amorphous powder

c) A black spongy mass

Remember to identify the property of sulphuric acid and write dilute or concentrated

ii) With respect to electrolysis of copper sulphate solution using Pt electrodes

a) Give an equation to show the reaction

b) Also list the changes seen during the process

iii) What would you observe when (4)

a) Sodium hydroxide is added to zinc chloride solution first a few drops then in excess

b) Lead nitrate is heated

c) Dry ammonia is passed over heated copper oxide

d) Concentrated nitric is added to zinc granules

#### QUESTION 4

i) With respect to the lab preparation of ammonia (3)

a) Give an equation for the same

b) Why is flask kept tilted ?

c) Give an equation for the reaction between ammonia with excess chlorine

ii) Give a difference between the following (5)

a) Group 1A and Group VIIA (number of electrons in valence shell)

b) Liquor ammonia and liquid ammonia (formula)

c) Hydrogen chloride and ammonia (fountain experiment result)

d) Acid salt and Basic salt (ion produced on dissociation)

e) Strong electrolyte and weak electrolyte (definition)

iii) Draw an electron dot diagram of the ammonium ion (2)

## QUESTION 5

i) With respect to the large scale preparation of sulphuric acid (4)

a) Give an equation for its catalytic reaction

b) Why is the sulphur trioxide obtained not directly absorbed in water?

c) Give an equation for the reaction mentioned above in ii)

d) Give a chemical test to differentiate between dilute and concentrated sulphuric acid

ii) Arrange the elements in increasing order of what is mentioned in brackets (3)

a) Li, C, Be, N, F (Electronegativity)

b) Be, B, Li, F, C (Atomic size)

c) Mg, Na, P, Si, S (Ionisation Potential)

iii) Explain the following terms (3)

a) Aqua Regia

b) Electrolysis

c) Acid

## QUESTION 6

i) Answer the following questions (4)

a) How is concentrated sulphuric acid diluted? Why?

b) What do you mean by constant boiling mixture explain with respect to nitric acid?

c) Concentrated nitric acid can be stored in aluminium container but not zinc containers. Why?

d) Why is ammonia used as a refrigerant?

ii) Give an equation for the following reactions (4)

a) sulphur and concentrated nitric acid

b) Dilute hydrochloric acid and sodium thiosulphate

c) Potassium dichromate and concentrated hydrochloric acid

d) Phosphorous and concentrated nitric acid

(ii) Complete the following statements by choosing the correct option (5)

Write only the correction answer

- a) non metals are \_\_\_\_\_ (more/less) electronegative than metals
- b) Negative electrode is called \_\_\_\_\_ (cathode/anode)
- c) Sulphuric acid is \_\_\_\_\_ (deliquescent/hygroscopic/efflorescent) in nature
- d) Pure water is a \_\_\_\_\_ (strong/weak/non electrolyte)
- e) Helium follows \_\_\_\_\_ (duplet/octet) rule

(iii) Give a chemical test to differentiate between the following (5)

- a) Dilute and concentrated hydrochloric acid
- b) dilute and concentrated nitric acid
- c) sodium hydroxide and ammonium hydroxide
- d) Manganese dioxide and copper oxide
- e) Lead nitrate and silver nitrate

(iv) Name the following(5)

- a) The elements of the second period
- b) Group of elements having stable configuration
- c) A metal that reacts with sodium hydroxide solution to release energy
- d) An inert electrode
- e) An example of a double salt
- v) Determine the E.F. of a compound containing 47.9% potassium, 5.5% beryllium, 46.6% fluorine

(2)

(atomic weight of Be=9, F=19, K=39)

iii) Identify the following as non electrolytes, weak electrolytes, strong electrolyte

a) ammonium hydroxide

b) pure water

c) sodium hydroxide

d) sulphuric acid