(8)

GREENLAWNS HIGH SCHOOL
TERMINAL EXAMINATION 2017-18

SUB : CHEMISTRY **CLASS : X**
TIME : 2 HOURS **MARKS : 80**

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

Section I is compulsory Section. Solve all questions.
Section II has 6 questions. Solve any 4.

SECTION I

Question 1 [10]

A) Name the following:-

i. A metal which is liquid at room temperature
ii. Type of bond in nitrogen molecule.
iii. Mixture of 2 or more metals in a fixed proportion.
iv. A compound used for electroplating with silver
v. The compound known as aqua fortis.
vi. An explosive liquid formed when ammonia and chlorine react
vii. The solution which turns black on coming in contact with hydrogen sulphide.
viii. Ammonium salt used in the preparation of alum.
ix. Method used to concentrate ZnS
x. Electrolyte used in nickel plating.

b) Write equation to show the following reaction (conversions) [5]

i) Non metal (yellow) $\longrightarrow$ to acid

ii) blue crystal $\longrightarrow$ black powder

iii) basic gas $\longrightarrow$ neutral gas

iv) red powder $\longrightarrow$ pungent smelling suffocating acidic gas

v) green salt $\longrightarrow$ reddish brown precipitate

c) What do you mean by the following terms [5]

i) Passivity of iron

ii) Electrolyte

iii) Avogadro's law

iv) Tempering of steel

v) Electrometallurgy

d) What do you observe when [5]

i) a red flower is placed in a jar containing chlorine

ii) hot water is poured over magnesium nitride

iii) Zinc granules are placed in copper sulphate solution.

iv) Nitric acid falls on the skin

v) Bleaching powder is added to dilute sulphuric acid.

e) Draw an electron dot diagram to show the formation of a hydronium ion. [1]

f) With respect to extraction of aluminium in Hall – Heroult's process. [5]

i) Give equation to show dissociation of its electrolyte

ii) Name the products formed at the cathode and anode

iii) List 2 special features of the process which are necessary for the process to proceed.

iv) Name the process for refining Al

g) Arrange the following element in increasing order as mentioned [4]

i) Ar, He, Ne , Kr (atomic size)

ii) F, O, Li, C (electron affinity)

iii) Cl, S, Al, Na (electro negativity)

iv) S, Na, Mg, P (Ionization Potential)

h) The diagram below shows a set-up for the lab preparation of nitric acid. Study it and answer the question that follow [5]

i) Give an equation to show the reaction

ii) what is the colour of the nitric acid obtained? Why?

iii) give equations to show brown ring test

iv) how would you differentiate between dilute and concentrated nitric acid.

vi) Define constant boiling mixture with respect to nitric acid.

...3/-

SECTION II

Solve any 4 from the given 6 questions.

Question 2.

a) With respect to the extraction s of zinc from its ore answer the following question. [5]

i. Give the common name of the main ores used (any 2)
ii. Describe the process used to concentrate the ore.
iii. Give 2 differences between roasting and calcination.
iv. Give an equation to reduce the oxide
v. Describe 2 methods of refining the zinc obtained through extraction.

b) Give equations for the preparation of the following salts [5]

i) Calcium carbonate

ii) Zinc sulphide

iii) Copper sulphate

iv) Ammonium chloride

v) Ferrous chloride
also mention the name of the method.

Question 3 [5]

a) Answer the following question s with relation to electrolysis of acidulated water.

i) Why is the water acidulated?

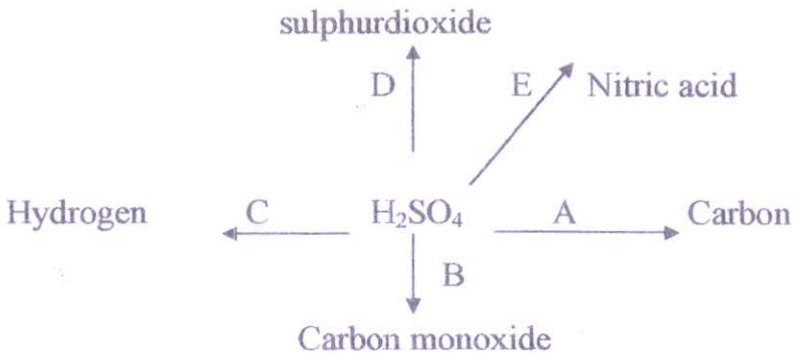
ii) Give equations to show the reaction taking place at cathode and anode

iii) What information does the electrolysis of water provide?

iv) Name the acid used?

v) While diluting sulphuric acid how would you carry it out? Why?

b) [5]



Write equations for the above reactions A – E
In each case identify the property and concentration of sulphuric acid.

Question 4

a) Answer the following question pertaining to the lab preparation of hydrogen chloride. [5]

i) Give an equation for the same.

ii) Give the action of dilute hydrochloric acid on sodium thiosulphate

iii) Name the drying agent used?

iv) How is the gas collected? Why?

v) How is the gas converted into an acid? Why?

vi) Give the common name for muriatic acid.

b) How would you differentiate between the following [5]
(Give equation and observation)

i) Manganese dioxide / copper oxide

ii) Sodium sulphite/ sodium sulphide

iii) Ferric chloride/ Ferrous sulphate

iv) Potassium carbonate / potassium sulphite

v) Dilute sulphuric acid/ concentrated sulphuric acid

Question 5. [5]

a) Give reasons for the following statements

i) washing soda crystals should not be left open exposed to air

ii) group VII elements are strong non metals while IA are strong metal

iii) Ionic compounds have high melting point and boiling point

iv) Starch iodide Paper turns blue black on contact with chlorine

v) Aluminum is not reduced using carbon/hydrogen

b) $(NH_4)_2 Cr_2 O_7 \xrightarrow{\Delta} N_2 + Cr_2O_3 + 4H_2O$ [2]

i) What volume of nitrogen at S.T.P will be evolved when 63 g of ammonium dichromate

ii) Also find the weight of Cr_2O_3 produced.

Cr = 52, H = 1, N=14, O = 16

...5/-

c) Give the composition of the following alloys [3]

i) Bronze

ii) Stainless steel

iii) Brass

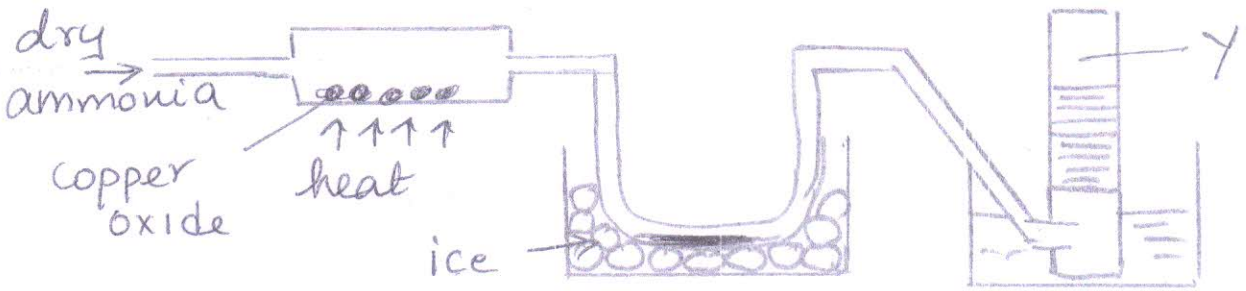
iv) German silver

v) Duralumin

vi) Solder

Question 6. [5]

a)



The above set- up shows a particular property of ammonia

i) Identify the property

ii) Give an equation for the above reaction.

iii) How would you test Y. give equations.

iv) Give an equation to show the reaction between ammonia and oxygen in the presence of platinum.

v) How is ammonia collected in the laboratory? Why?

b) i) A strip of copper is placed in four different colourless salt solutions. [2]

$AgNO_3$, KNO_3, $Zn(NO_3)_2$, $NaNO_3$

what would you observe in each case. Give a reason for your answer.

c) A sample of oxygen weighs 3.2 g calculate. [3]

i) the number of moles it contains

ii) No. of molecules present

iii) Volume

at STP.

Question 7. [6]

	I – A	II – A	III – A	IV – A	V – A	VI – A	VII – A	O
						O	J	Ne
	Li		D			H	K	
	A	Mg	E	Si				
	B	C		F	G			L

i. Which is the most electronegative element
ii. How many valence electrons are present in G
iii. Write the formula of the compound between B and H.
iv. Draw the electron dot diagram of the compound formed between C and K
v. Define bridge elements
vi. Give 1 difference between IA and II A (reaction with water)
vii. Name the largest atom in group I A.
viii. What is the importance of the Periodic Table.

b) Give equations for the following [4]

i) Dilute hydrochloric is added to quicklime

ii) Ammonia is mixed with excess chlorine

iii) Ammonium nitrate is heated

iv) Lead nitrate is treated with ammonium sulphate