GREENLAWNS HIGH SCHOOL
PRELIMINARY EXAMINATION YEAR 2018-19

SUBJECT : CHEMISTRY CLASS : X
TIME : 2 HRS MARKS :80

Answers to this paper must be written on the paper provided separately.
You will not be allowed to write for the first 10 minutes. This time is to be spent in reading the question paper.
The paper has 2 sections.
Section I has compulsory section
Section II has 6 questions. Solve any 4.

SECTION – I

Question 1. [10]

a) Name them.

i. A compound present in denatured spirit.
ii. Elements added to iron to convert it to steel.
iii. Electrolyte used to plate silver
iv. Formula of alum
v. Type of reaction alkenes undergo
vi. Drying agent for ammonia
vii. Promoter used in contact process
viii. Formula of Aqua Regia
ix. A ehloride soluble in hot water but not cold water
x. An organic compound used as a thermometer

b) What would you observe when [5]

i. Ammonia is passed over red hot copper
ii. Dilute sulphuric acid is added to Barium chloride solution
iii. Nitric acid comes in contact with our skin
iv. Dilute hydrochloric acid is added to copper oxide.
v. Silver chloride is mixed with ammonium hydroxide.

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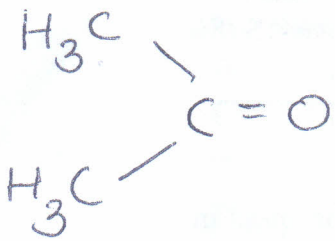
c) Write the IUPAC names of the following compounds. [2 ½]

i)



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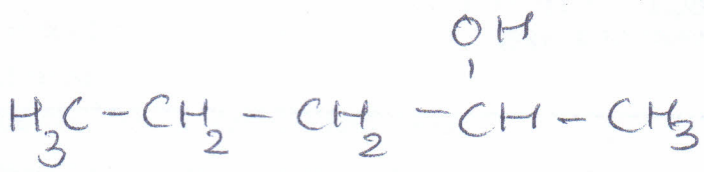

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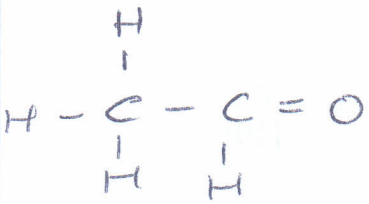

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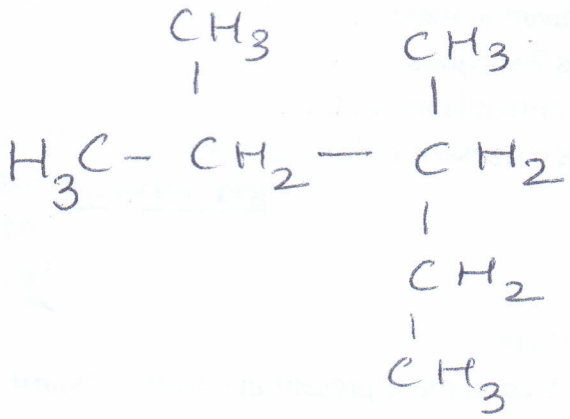

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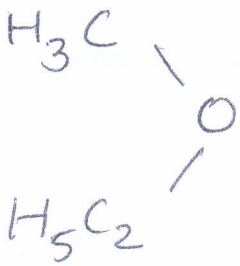


d) Draw the structural formula of the following organic compounds. [2 ½]

i. Diethyl ether
ii. Ethyl acetate
iii. 1,2 dichloro pentane
iv. But -2 – yne
v. Propionic acid

e) How would you differentiate between the following (equation & observation) [5]

i. Ethyne/ethene
ii. Ethene/ ethane
iii. Zinc nitrate/ lead nitrate
iv. Copper oxide / manganese dioxide
v. Sodium chloride/ammonium chloride

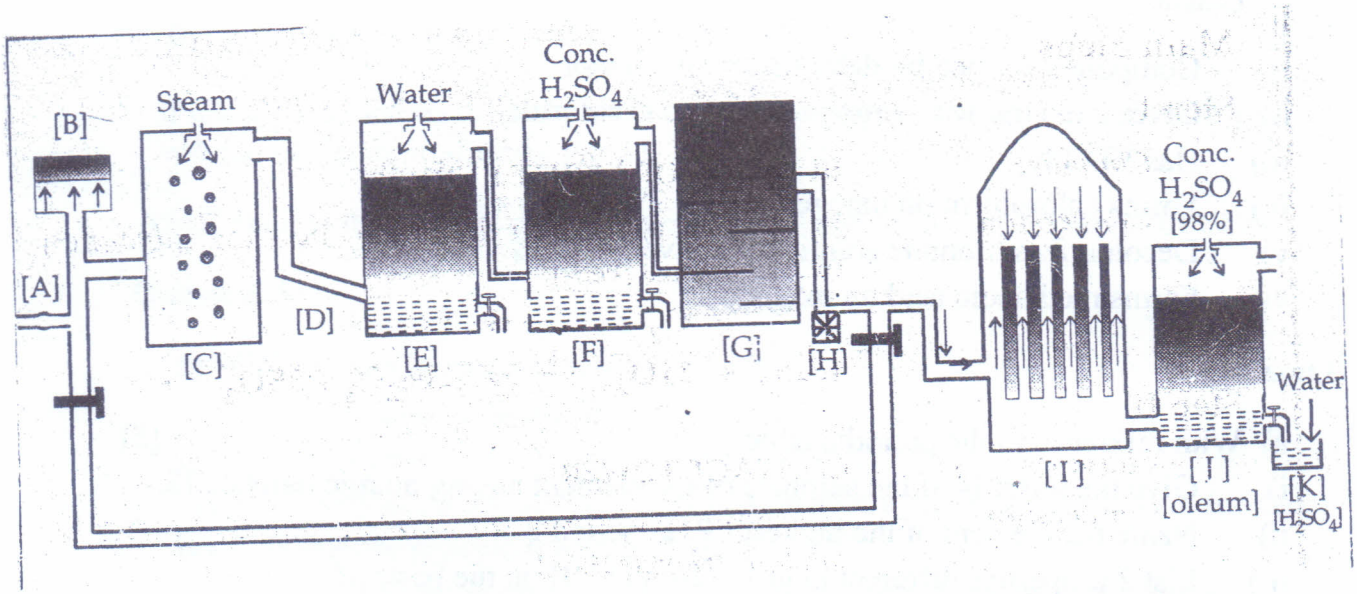
f) Give equations to show the following convessions [5]

i. Non volatile acid to a gas
ii. Zinc nitrate to zinc carbonate
iii. Aluminium nitride to aluminium hydroxide
iv. Salt to methane
v. Ethane to corresponding acid

g) Draw an electron dot diagram to show formation of ammonium ion [2]

h) Calculate the mass of $KClO_3$ required to produce 6.72ℓ of oxygen at S.T.P. [2]
(K = 39, Cl = 35.5 , O = 16)

i) With respect to large scale manufacture of sulphuric acid [6]



i) Name the process
ii) Give an equation for the catalytic reaction
iii) What is the role of concentrated sulphuric acid in the preparation.
iv) How is sulphuric acid diluted? Why?
v) Name the chamber B,C,D,E,F,G,I drawn in the diagram above.

SECTION – II

Solve any 4 of the given 6 question

Question 2.

a) i) Give reasons for the following statements [5]
i) Dilute acids are strong electrolytes
ii) Liquid ammonia is used as a refrigerant
iii) Methane is also known as marsh gas.
iv) A wooden table gets charred when conc H_2SO_4 falls on it.
v) Atomic size decreases as you go across a period.

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b) Draw a flow chart to show large scale production of nitric acid. [2]

c) From the list given below select one answer that matches the description given [3]

Ethanol
Ethane
Methanol
Methane
Ethyne
Ethene

i) Compound formed by dehydration of ethanol.
ii) Gives a red ppt with ammonical cuprous chloride
iii) Has VD 14
iv) Forms chloroform on halogenalion
v) Decolourizes bromine solution dissolved in CCl_4
vi) Forms methanoic acid on oxidation.

Question 3.

a) With reference to the periodic table. [5]

i) Give the formula of the sulphate of the element having atomic number 13.
ii) Name the element of the highest I.P. in period 2.
iii) List 2 properties different in group IA and VII on the basis of
A $\longrightarrow$ reaction with water
B $\longrightarrow$ type of bond
iv) Define electron affinity
v) Draw the electron dot diagram of a molecule of carbon dioxide.
vi) What are actinides and lanthanides

b) With respect to lab preparation of ammonia gas [5]

i) Why is ammonium nitrate not used
ii) Name the drying agent used
iii) How is ammonia gas collected? Why?
iv) Ammonia is a covalent compound yet it dissolves in water. Why
v) Give an equation to show reaction between chlorine and excess ammonia.

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Question 4.

a) With respect to the preparation of ethyne in the lab. [5]

i) Give an equation using a salt.

ii) Draw the isomers of butyne

iii) Give an equation to show

A ⟶ hydrogenation of ethyne

B ⟶ addition of hydrogen chloride to ethyne

C ⟶ halogenation of ethyne

b) i) State Avogadro's law [5]

ii) $P + 5HNO_3 \longrightarrow H_3PO_4 + H_2O + 5NO_2$

If 6.2 g phosphorous is used find the mass of phosphoric acid produced and also volume of steam produced (P = 31, H = 1, O=16 , N = 14)

iii) Calculate the number of molecules and volume of CO_2 in 2.5 moles of CO_2

Question 5

a) With respect to extraction of aluminium. [5]

i) Why is caustic alkali added to bauxite.

ii) Give a balanced equation of the above reaction

iii) 2 compounds are added to alumina. Why are they added (1 reason for each)

iv) Name the process mentioned in (i)

v) List 2 special features of this electrolysis apart from those mentioned in (iii)

b) Find the M.F. of a compound containing C = 4.8 %, Br = 95.2% [2 ½]
(at wt of C =12, Br = 80). V.D. of the compound is 252

c) i) Match the PH value of the compounds given below. [2 ½]

List A	List B
Acetic acid	13
Water	2
NaOH	5
Sulphuric acid	9
Ammonium hydroxide	7

Question 6.

a) With respect to electrolysis of copper sulphate solution using active electrodes.[5]

i) Name the electrodes used
ii) Give equation for the reactions at cathode and anode
iii) Give 3 observations seen during electrolysis
iv) Define electrolysis
v) Give equations for electrolysis of acidified water.

b) Give equations for the following [5]

i) Reduction of Iron oxide using aluminium powder.
ii) Action of conc HCl on Potassium permanganate.
iii) Catalytic oxidation of ammonia.
iv) Sodium sulphite and dilute hydrochloric acid.
v) Copper and concentrated nitric acid.

Question 7.

a) A colourless gas A fumes strongly in the air. The gas produces dense white fumes when a glass rod dipped in ammonia solution is held near the gas. [5]

i) Name the gas
ii) Give an equation to prepare the gas in the lab.
iii) Why does the gas fume in air.
iv) Name the compound formed in the dense white fumes.
v) Name the method of preparation used to obtain the compound in the lab
vi) Give the action of the gas A of an caustic soda
vii) Give an example of a double salt.

b) Name the property of sulphuric acid in the following equations. Also write balanced equations for the same. [5]

i) As a source of hydrogen when treated in dilute form to Zinc
ii) Production of hydrogen chloride on treating concentrated acid with sodium chloride.
iii) Liberation of sulphur from Hydrogen sulphide in concentrated form.
iv) Liberation of ethylene gas in concentrated acid from an alcohol
v) Production of sulphur dioxide when concentrated acid is treated with copper turnings.