R. I. C. S. E.

SECOND PRE-BOARD EXAMINATION 2018-2019

STD. : X **MARKS: 80**

SUB. : CHEMISTRY **TIME: 2 HRS.**

Answer to this Paper must be written on the paper provided separately. You will not be allowed to write during the first 15 minutes. This time is to be spent in reading the question paper. The time given at the top of this paper is the time allowed for writing the answers.

Section A is compulsory. Attempt any four questions from Section B. The intended marks for questions or parts of questions are given in the brackets[].

SECTION - A

(Compulsory)

Question I.

A) Fill in the blanks. [5]

1. The basicity of acetic acid is _____ (3, 1, 4)
2. If an element 'C' had a low electronegativity and ionization potential it would have more tendency to _____ (gain , loss , remain same)
3. Dilute sulphuric acid reacts with active metals to liberate _____ and form their sulphates. (hydrogen , oxygen , water)
4. Name the main constituent of stainless steel. (Cr , Fe , C)
5. Electrovalent compounds have _____ (high , low) boiling point.

B) Choose the correct answer from the options given below. [5]

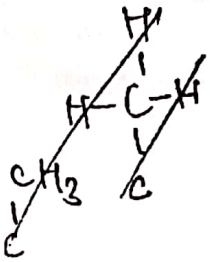
1. Alkanes are commonly called as
   a) Olefins b) Paraffin's
   c) Esters d) None of these

2. A colorless solution which gives a precipitate with HCl.
   a) $AgNO_3$ b) NH_4Cl
   c) Aqua regia d) Zn

3. An element in period 3 whose electron affinity is Zero.
   a) Neon b) Sulphur
   c) Sodium d) Argon

4. During electrolysis of copper sulphate solution with copper electrode the color of the electrolyte:
   a) Remain same b) Fades away
   c) Become darker d) No color change

5. Hydroxide of this metal is soluble in sodium hydroxide solution.
   a) Magnesium b) Lead
   c) Silver d) Copper



C) Write the balance equations for the following. [5]

1. Sodium acetate passed over sodalime.
2. Catalytic oxidation of ammonia.
3. Metallic sulphite reacts with dil. HCl.
4. Sugar crystal with conc. Sulphuric acid.
5. Reaction between ethyl alcohol and ethanoic acid.

D) Give observation for the following. [5]

1. Ammonium hydroxide solution is added to copper (II) nitrate solution in small quantities and then excess.
2. A paper soaked in potassium permanganate solution is introduced in to gas jar of sulphur dioxide.
3. What do you observe when carbon mono oxide passed over heated copper oxide.
4. When copper is added to the conc. Nitric acid.
5. Ethene is passed through bromine solution in presence of carbon tetra chloride.

E) Write structural formula for the following. [5]

1. 4-methylpentan-2-ol
2. Ethyne
3. 2-methylpropane

4. –Methanoic acid
5. Propanal

F) Give reasons for the following. [5]

1. Sugar solution does not conduct electricity.
2. Dry HCl does not change the color of the litmus paper.
3. Ionization potential increases as we move across the period.
4. During electrolysis of Molten lead bromide Graphite anode is preferred to the other electrode.
5. Alkali metals are good reducing agents.

G) Name the following. [5]

1. A reaction in which hydrogen of an alkane is replaced by a halogen.
2. Name the substance used as a catalyst during Ostwald process.
3. An electrolyte used in electroplating of substances by silver.
4. A liquid non-metal.
5. A hydrocarbon which contributes towards green house gases.

H) A cylinder contains 68 g of ammonia gas at STP

a) What is the volume occupied by this gas. [2]

b) How many moles of ammonia present in the cylinder. [2]

c) How many molecules of ammonia are presents in the cylinder? [1]

(N=14, H=1)

SECTION - B : [40 Marks]

Attempt any 4 questions from this group

Question II.

1. State the components of following alloys: [3]
   a) Brass
   b) Stain less steel
   c) Duralumin

2. Write the balanced reaction for the following. [4]

a) Red lead is heated with conc. HCℓ.

b) Sulphur reacts with concentrated Nirtic acid.

c) Magnesium nitride is warmed with water.

d) Sodium thiosulphate with dil. HCℓ.

3. Draw the Structure of Ammonium ion. [3]

Question III.

1. Empirical formula of the compound is C_2H_5. Its vapor density of 29. Determine the relative molecular mass of the compound and its molecular formula. [2]
(C=12, H=1)

2. $AgNO_3 + NaCℓ \rightarrow AgCℓ + NaNO_3$

How many grams of silver nitrate is required to precipitate 287g of silver chloride?

(N=23, O=16, Cℓ=35.5 , Ag=108) [3]

3. There are three element, E,F,G, with atomic number 19,8,17 respectively. [5]

a) Classify the elements as metals and Non-metals.

b) Give the molecular formula of the compound formed between E and G, and mention the type of bond formed in this compound.

Question IV.

1. The following questions based on the ammonia gas preparation in the laboratory. [4]

a) State why ammonium nitrate is not used during ammonia preparation.

b) Name the drying agent used in this process.

c) How is ammonia gas collected?

d) Explain why it is not collected over water?

2. Define Isomerism. [1]

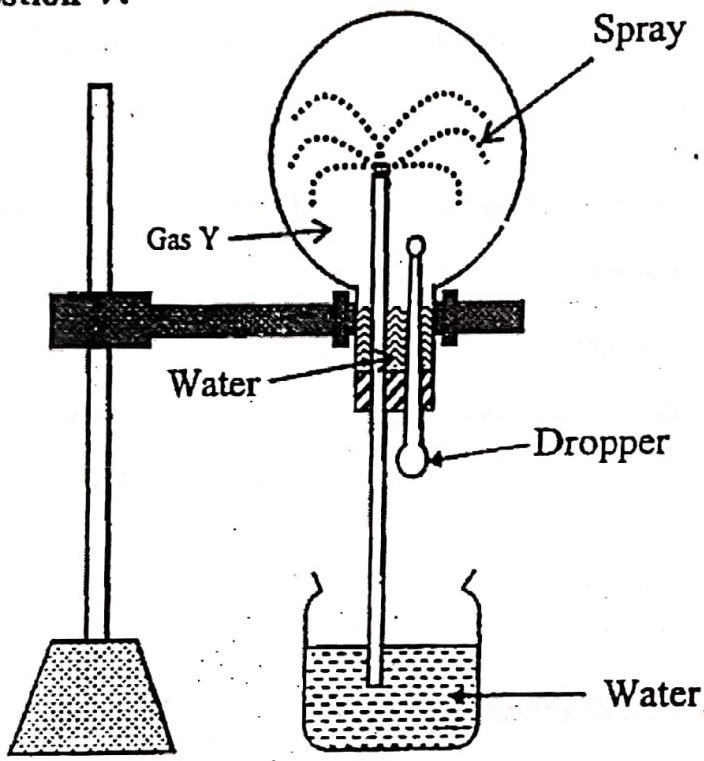
3. Give the IUPAC name of the possible isomers of C_4H_{10}. [2]

4. What is denatured Alcohol? [1]

5. Write two uses of Alkenes. [2]

Question V.

1.



a) Identify the gas Y. [1]

b) What property of the gas does this experiment demonstrate? [1]

c) Name the other gas which has same property and can be demonstrated through this experiment. [1]

2. **Copy and complete the table related to the electrolysis.** [4]

Sr no	Name of the electrolyte	Name of the cathode	Name of the anode	Product at the cathode	Product at the anode
1	$CuSO_{4(aq)}$	Copper	Copper		
2	$PbBr_2$(molten)	Platinum	Platinum		

3. **Classify the following as oxidation and reduction reaction, also complete the reaction.** [3]

a) $Cu \rightarrow Cu^{2+}$

b) $Fe3+ \rightarrow Fe^{2+}$

c) $C\ell \rightarrow C\ell^{-}$

Question VI.

1. Calculate the percentage composition of carbon in ethyne (C_2H_2). (C=12,H=1) [2]
2. Give the balance chemical equation for the conversion: A to C. [3]

CuO .....A...$\rightarrow CuSO_4$ ....B... $\rightarrow Cu(OH)_2$ ....C..$\rightarrow Cu(NO_3)_2$

3. **The following questions are refer to the extraction of aluminum.** [5]

a) Name the principle from which aluminum is extracted.

b) Name the compound added to the pure alumina during electrolytic extraction process.

c) Write the equation for the reaction that occurs at cathode terminal.

d) What will be the product of each terminal during electrolytic extraction process?

Question VII.

1. **Identify the gas evolved:** [5]

a) Sodium bi carbonate passed over dil. $HC\ell$.

b) Metallic sulphide reacts with dil. H_2SO_4.

c) Nitride of aluminum reacting with warm water.

d) Manganese (IV) oxide reacting with dil. $HC\ell$.

e) Decomposition of Zinc nitrate,

2. **Arrange the following elements as per the instructions.** [5]

a) Cs, Na, Li, K, Rb (increasing order of metallic character)

b) Mg, Cℓ, Na, S, Si (decreasing order of atomic size)

c) Na, K, Cℓ, S, Si (increasing order of ionization energy)

d) Cℓ, F, Br, I (increasing order of electron affinity)

e) F, Cℓ, Br (increasing order of electronegativity)

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