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BANGALORE

SECOND PRELIMINARY EXAMINATION 2019-20

STD: X **MARKS: 80**

SUB: CHEMISTRY **TIME: Hrs.**

SECTION – A [40 MARKS]

Attempt all questions

Q 1.

A. Elements A, B, C and D have atomic numbers 20, 8, 6, 17 respectively. Without identifying the elements, answer the following questions. **[5]**

1. What type of bonding is formed between

   a. A and B b. C and D c. A and D

2. Writ the formula of the compound.

B. Fill in the blanks. **[5]**

1. All salts are _____ electrolyte.
2. The solution of weak electrolyte contains both _____ and _____
3. The solution of strong electrolyte contains _____ only.
4. The bonding present in both _____ and _____ phosphorus trichloride and phosphorus pentachloride is _____ but phosphorus trichloride is _____ and _____ phosphorus pentachloride is _____ in state.

C. Write balanced chemical equations for the following **[5]**

1. Iron with dilute sulphuric acid.
2. Sodium hydroxide and Sulphur dioxide.
3. Copper oxide and dilute nitric acid.
4. Sodium thiosulphate and dilute hydrochloric acid.
5. Nitrogen reacts with hydrogen.

D. What will you observe when [5]

1. Gold is placed in Aqua regia.
2. Sulphur dioxide is slowly passed through potassium permanganate solution.
3. Sulphur dioxide is passed through lime water.
4. Sodium hydroxide solution is slowly added to lead nitrate solution.
5. Silver Nitrate solution is mixed with sodium chloride solution.

Q II

E. Give balanced chemical equations for observations in D – 1 to 5. [5]

F. [5]

1. Define molar volume.
2. $2CO + O_2 \rightarrow 2CO_2$.

   Volume of carbon dioxide is obtained by burning 14g carbon monoxide in oxygen completely at STP.

G. Name the following:- [5]

1. The most reactive halogen
2. The most metallic element
3. Radioactive element of group 2
4. Least reactive halogen
5. An acidic oxide of carbon which causes green house effect.

H. Define the following terms:- [5]

1. Ionisation potential
2. Electron affinity
3. Group
4. Period
5. Electronegativity

SECTION – B [40 MARKS]

Attempt any four questions

Q II. **[10]**

A. The following questions are related with the electro refining of impure copper. Name

1. Cathode
2. Anode
3. Electrolyte
4. Give equation taking place at cathode and anode

B. How does dilute hydrochloric acid react with the following?

1. Sodium carbonate
2. Sodium sulphite
3. Magnesium

Q III. **[10]**

A. Name the gas evolved and write balanced chemical equations when

1. Ammonium dichromate is heated
2. Sal ammoniac reacts with slaked lime

B. How does ammonium hydroxide help in distinguishing between

1. Lead hydroxide and zinc hydroxide
2. Lead nitrate and zinc nitrate

C.

1. A given greenish coloured solution A on reaction with Barium chloride solution gives a white precipitate, which is insoluble in all the mineral acids and another part of solution A on treating with Ammonium hydroxide gives dirty green precipitate. Identify:

C. Write balanced chemical equation for the reaction of copper with dilute nitric acid and hot concentrated nitric acid.

D. Write balanced chemical equation for the reaction of ammonia with oxygen.

1. In the presence of a catalyst
2. In the absence of a catalyst.

Q VI. **[10]**

A. Structural formula of

1. Ethane
2. Ethene
3. Ethyne

B. Which out of ethane and ethyne reacts with Fehling's solution and Tollen's reagent.

C. Give balanced chemical equations for the following reactions

1. Aluminium carbide is hydrolysed
2. Sodium Acetate is decarboxylated
3. Ethanol is dehydrated
4. Ethyl Bromide is reduced
5. Methane reacts with chlorine in the presence of diffused sunlight.

D. Name the product formed when acetylene polymerises.

Q VII. From the equation $CH_4 + O_2 \rightarrow CO_2 + 2H_2O$ **[10]**

1. What volume of carbon dioxide is produced by 200cm cube of Methane? What volume of oxygen is required to completely burn 200 cm cube of Methane?

C. Write balanced chemical equation for the reaction of copper with dilute nitric acid and hot concentrated nitric acid.

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1. In the presence of a catalyst
2. In the absence of a catalyst.

[10]

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1. What volume of carbon dioxide is produced by 200cm cube of Methane? What volume of oxygen is required to completely burn 200 cm cube of Methane?

2. Given compound has following percentage composition H = 1.59%, N=22.22%, O=76.19%.

   Find the empirical formula for the compound [H=1, N=14, O=16]

3. $NH_4NO_3 \rightarrow N_2O + 2H_2O$

   Calculate

   a. The volume of nitrous oxide formed when 40g of Ammonium nitrate is heated.

   b. Mass of water in grams when 54g of Ammonium nitrate is heated

   [H=1, N=14, O=16]

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Ryan International School
II Pre Board Chemistry

Instructions: Kindly refer this sheet for the respective questions

QI.

A. 2. Write the formula of the compound formed between: [2]
A and B, A and D

B. 4. _____ is the catalyst used in contact process. [1]

C. 2. Conc. Sodium Hydroxide with Zinc oxide. [1]
4. Sulphur with conc. Sulphuric acid. [1]

D. 1. What will be observed at anode during electrolysis of Lead Bromide using graphite electrode? [1]

G. 3. Name the reaction which leads to the formation of chloroform from dichloromethane.

QIII.

A. 1. Complete oxidation (Combustion) of methane in excess of oxygen.

QIV.

B. (1). Acetylene (C_2H_2) burns in air forming carbon dioxide and water vapour. Calculat the volume of air required to completely burn 50 cc of acetylene. [Assume air contain 20% of oxygen]. [2]

(2). $2KMnO_4 \longrightarrow K_2MnO_4 + MnO_2 + O_2$
Given that the molecular mass of $KMnO_4$ is 158, what volume of Oxygen would be obtained by the complete decomposition of 15.8g of potassium permanganate? [Mol volume at room temperature is 24L.] [2]

QVI.

B. Give a chemical test to differentiate between ethane and ethyne (Test for unsaturation). [2]

C. 1. Hydrolysis of Calcium Carbide. [1]

D. Name the product formed when ethanol reacts with acetic acid. [1]