

CLASS-10<sup>th</sup> ICSE CHEMISTRY

MOCK-TEST-2(14.04.2022)

TERM-2

T.T- 1:30 HR

M.M- 40

**General Instructions:**

- i Answers to this Paper must be written on the paper provided separately.
- ii You will not be allowed to write during the first 10 minutes.
- iii This time is to be spent in reading the question paper.
- iv The time given at the head of this Paper is the time allowed for writing the answers.
- v Attempt all questions from Section A and any three questions from Section B.
- vi The intended marks for questions or parts of questions are given in brackets [].

SECTION -A

**Attempt all questions)**

1. The correct answers to the questions from the given options.  
(Do not copy the question, Write the correct answer only.) [10]
  - (i) The IUPAC name of dimethyl ether is:
    - (a) Ethoxy methane
    - (b) Methoxy methane
    - (c) Methoxy ethane
    - (d) Ethoxy ethane
  - (ii) The unsaturated hydrocarbons undergo:
    - (a) A substitution reaction
    - (b) An oxidation reaction
    - (c) An addition reaction
    - (d) None of the above
  - (iii) A metal present in cryolite other than sodium is:
    - (a) Potassium
    - (b) Calcium
    - (c) Magnesium
    - (d) Aluminium
  - (iv) Nitrogen used in Haber's process is obtained from:
    - (a) Fractional distillation of liquid air
    - (b) Bacterial decomposition of nitrogen
    - (c) Decomposition of nitrates
    - (d) Decomposition of nitrides
  - (v) The acid which can produce carbon from cane sugar is:
    - (a) Concentrated Hydrochloric acid
    - (b) Concentrated Nitric acid
    - (c) Concentrated Sulphuric acid
    - (d) Concentrated Acetic acid
  - (vi) Which of the following acids was formerly known as aqua fortis?
    - (a) Hydrochloric acid
    - (b) Nitric acid
    - (c) Sulphuric acid
    - (d) Phosphoric acid

- (vii) The oxidised product obtained on action of conc. nitric acid on carbon is:  
(a) Carbon dioxide (b) Nitrogen dioxide  
(c) Water (d) Nitric oxide
- (viii) Identify the statement that does not describe the property of alkenes.  
(a) They are unsaturated hydrocarbons.  
(b) They decolourise bromine water.  
(c) They can undergo addition as well as substitution reactions.  
(d) They undergo combustion with oxygen forming carbon dioxide and water.
- (ix) Sulphur dioxide turns acidified potassium dichromate solution green. Which of the following properties was shown by sulphur dioxide in this reaction?  
(a) Oxidising property (b) Reducing property  
(c) Dehydrating property (d) Acidic nature
- (x) Hydrogen chloride gas is not collected over water since:  
(a) It is covalent in nature. (b) It is ionic in nature.  
(c) It is highly soluble in water. (d) It is corrosive in nature.

### SECTION-B

**(Attempt any three questions from this Section.)**

2. (i) (a) Write the equation for the reaction in the Haber's process that forms ammonia. [2]  
(b) State the purpose of liquefying the ammonia produced in Haber's process.
- (ii) (a) Draw the chain isomers of  $C_5H_{12}$ .  
(b) Draw the position isomers of  $C_4H_6$ . [2]
- (iii) Give balanced chemical equations for each of the following: [3]  
(a) Laboratory preparation of ammonia using an ammonium salt.  
(b) Reaction of ammonia with excess chlorine.  
(c) Reaction of ammonia with sulphuric acid.
- (iv) (a) In the contact process for the manufacture of sulphuric acid, Sulphur trioxide is not converted to sulphuric acid by reacting it with water. Instead a two-step procedure is used. Write the equation for the two steps involved. [3]  
(b) What type of substance will liberate sulphur dioxide from sodium sulphite?  
(c) Write the equation for the reaction by which sodium sulphite is converted to sulphur dioxide.
3. (i) State the relevant reason for each of the following: [2]  
(a) Low temperature favours the synthesis of ammonia in Haber's process.  
(b) Nitric acid acts as an oxidising agent.

- (ii) Fill in the blanks from the choices given in brackets: [2]  
 (a) Methane burns in air with a \_\_\_\_\_ to form carbon dioxide and water vapor. (bluish non-sooty flame, bluish sooty flame)  
 (b) Magnalium is an alloy of \_\_\_\_\_. (copper and zinc, aluminium and magnesium)
- (iii) The following questions related to the extraction of aluminium by electrolysis: [3]  
 (a) Give the equation for the reaction that takes place at cathode.  
 (b) Explain why it is necessary to renew anode from time to time.  
 (c) What is the role of graphite?
- (iv) (a) Ethene forms saturated products on reacting with halogens (chlorine and bromine). Name them and write balanced equations.  
 (b) Give the conditions and the main product formed by substitution of Alkane by halogen. [3]
4. (i) Write balanced chemical equations for each of the following: [2]  
 (a) When excess of ammonia is treated with chlorine.  
 (b) An equation to illustrate the reducing nature of ammonia.
- (ii) (a) Of the two gases, ammonia and hydrogen chloride, which is more denser? Name the method of collection of this gas.  
 (b) Give one example of a reaction between the above two gases which produces a solid compound. [2]
- (iii) Define the term isomerism. State two main causes of isomerism. Illustrate With suitable examples. [3]
- (iv) Why  $\text{SO}_3$  is not directly dissolved in water to form sulphuric acid? [3]
5. (i) Give balanced equations for the following:  
 (a) Action of cold and dilute nitric acid on copper.  
 (b) Action of concentrated nitric acid on sulphur. [2]
- (ii) State two relevant observation for: Ammonium hydroxide solution is added to zinc nitrate solution slowly and then in excess. [2]
- (iii) (a) Name the method used for obtaining ammonia on a large scale.  
 (b) What is the actual ratio of the reactants involved in synthesis of Ammonia?  
 (c) The temperature used is  $450^\circ\text{C}$ . Give reason why?  
 (1) A lower temperature is not used?  
 (2) A higher temperature is not used? [3]
- (iv) Draw the structural formula of the following compounds: [3]  
 (a) Butyne (b) Pentene  
 (c) Propanone

6. (i) (a) At which electrode, aluminium is preferentially discharged during the electrolytic reduction of fused alumina? [2]  
 (b) Give any two uses of Duralumin. [2]
- (ii) Give two characteristics of liquefied hydrogen chloride. [2]
- (iii) Give one equation each to show the following properties of sulphuric acid: [3]  
 (a) Dehydrating property (b) Acidic nature  
 (c) As a non - volatile acid
- (iv) Copy and complete the following table relating to the important industrial processes. Output refers to the product of the process and not the intermediate steps: [3]

Name of the process	Inputs	Catalyst	Equation for catalyzed reaction	Output
Contact process	Sulphur dioxide + Oxygen			