Mock Board Exam

STD: X	**SUBJECT: Chemistry**	**ASSESSMENT: Mock Test**
Maximum marks : 40	**21/3/2022 11:00 - 21/3/2022 22:30**	**Time Limit : 150 Minutes**

Answers to this Paper must be written on the paper provided separately.
Attempt all questions from Section A and any three questions from Section B.
A students has to answer a question either by typing it out, in the space provided, or writing down each answer on paper, and uploading a picture of it using the upload option.
A student is advised to write the answers in a clear, legible handwriting using a blue/black ball point pen before uploading it.

Section A

10 Marks

(Attempt all questions)

Do not copy the question, write the correct answer only. Select the correct answer for the MCQ questions.

10 Marks

Choose the correct answers to the questions from the given options.

(Do not copy the question, Write the correct answer only.)

1 The working principle of _____ is based on the difference in the density of the ore and gangue particles. **1 M**

(A) Magnetic separation (B) Froth floatation (C) Leaching
(D) Grinding

2 Brass is an alloy of copper and _____. **1 M**

(A) Magnesium (B) Iron (C) Aluminium (D) Zinc

3 _____ metal does not react with water at any temperature. **1 M**

(A) Zinc (B) Silver (C) Sodium (D) Magnesium

4 The drying agent used to dry HCl gas is _____. **1 M**

(A) Conc. H_2SO_4 (B) ZnO

(C) Al_2O_3 (D) CaO

5 _____ is insoluble in excess of ammonium hydroxide. **1 M**

(A) Calcium hydroxide

(B) Ferric hydroxide

(C) Copper hydroxide

(D) Zinc hydroxide

6 _____ colour precipitate forms when sodium hydroxide is added to ferric salt. **1 M**

(A) Dirty green (B) White (C) Brown (D) Reddish brown

7 The chemical used in the brown ring test is _____. **1 M**

(A) $CuSO_4$ (B) $FeSO_4$

(C) $Cu(OH)_2$ (D) $ZnSO_4$

8 Covalent bond is formed between: **1 M**

(A) Metal and non-metal (B) Two metals

(C) Two non-metals (D) Non-metal and an ion

9 The IUPAC name of $CH_3 - CH_2 - CH_2 - CH_2 - CH = CH_2$ is: **1 M**

(A) Hex-2-ene (B) Pent-2-ene (C) Hex-1-ene (D) Pent-1-ene

10 The isomerism exhibited by the pair of compounds 1-Propanol & 2-Propanol is: **1 M**

(A) Position isomerism (B) Chain isomerism

(C) Functional isomerism (D) Both position and chain isomerism.

Section B

30 Marks

Attempt any three groups from this Section B.

Group 1 **10 Marks**

11 Differentiate between calcination and roasting. **2 M**

12 Write balanced chemical equations for the reaction of dilute hydrochloric acid with each of the following: **2 M**

(a) Iron

(b) sodium hydrogen carbonate

13 Write the steps involved in industrial manufacturing of ammonia. **3 M**

14 Define the term functional group. Identify the functional group family of the given compounds: **3 M**

(a) $CH_3 - CH_2 - CH_2 - OH$

(b) $CH_3 - CH_2 - COOH$

Group 2 **10 Marks**

15 Suggest a process that can be used for converting carbonate and sulphide ores into their respective metal oxides. Give examples for the same. **2 M**

16 Why concentrated H_2SO_4 is not used as a drying agent during the preparation of ammonia? **2 M**

17 (a) Name the acid formed when sulphur dioxide dissolves in water. **3 M**
(b) Name the gas released when dilute sulphuric acid reacts with metallic sulphide.
(c) Name the gas released when dilute sulphuric acid reacts with metal carbonate.

18 Write a balanced chemical equation for the reaction of ethanoic acid with the following: **3 M**
(a) Sodium (b) Sodium hydroxide (c) Ethanol.

Group 3 **10 Marks**

19 How would you distinguish experimentally between an alcohol and a carboxylic acid? **2 M**

20 Give reasons for the following statements: **2 M**
(a) Conc. nitric acid prepared in the laboratory is yellow in colour.
(b) In the laboratory preparation of nitric acid, the mixture of concentrated sulphuric acid and sodium nitrate should not be heated very strongly above $200^\circ C$

21 Give favourable conditions for the oxidation of sulphur dioxide in the contact process. **3 M**

22 (a) Carbonate of metal 'X' is abundant in the earth crust and its hydroxide is used in white washing. Identify metal 'X'. **3 M**
(b) How will you convert this carbonate into its oxide? Name the process and write its chemical equation.

Group 4 **10 Marks**

23 Write the structural formula of ethanol. What happens when it is heated with excess concentrated H_2SO_4 at $443\ \mathrm{K}$? **2 M**

24 Why do $HCl,\ HNO_3$ etc., show acidic character in aqueous solution while solutions of compounds like alcohol and glucose do not show acidic character? **2 M**

25 Identify the substance oxidised, substance reduced, oxidising agent and reducing agent in the following chemical reaction: **3 M**
$ZnO\,(s) + C\,(s) \longrightarrow Zn\,(s) + CO\,(g)$

26 With reference to electrolytic refining of copper, answer the following: **3 M**
(a) Name the electrolyte used.
(b) Name the cathode and anode used.
(c) Write the reaction that occurs at cathode and anode.

Group 5 **10 Marks**

27 (a) All alkalis are bases, but all bases are not alkalis. Explain. **2 M**
(b) Sodium hydroxide is a monoacidic base. Give reason.

28 Which method will be used to reduce the following? Explain by giving a suitable example. **2 M**
(a) Oxides of less reactive metals
(b) Oxides of moderately reactive metals

29 An organic compound 'A' having molecular formula $C_2H_4O_2$ turns blue litmus red and gives a brisk effervescence with sodium hydrogen carbonate. Give the structural formula, the IUPAC name and the common name of compound 'A'. **3 M**

30 Explain the following reactions. **3 M**
(a) Carbon and conc. nitric acid is heated.
(b) Dilute HNO_3 is added to copper.
(c) Concentrated nitric acid is heated.