A

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E 1006-Ch

SECOND TERM EVALUATION 2022-23

CHEMISTRY

Class: X

Time: 1½hour
Total Score : 40

Instructions

- The first 15 minutes is cool off time. You may use the time to read and plan your answers.
- Answer the questions only after reading the instructions and questions thoroughly.
- Score and time are to be considered while answering.

Answer any 4 questions from 1 to 5. Each question carries one score. **(4 x 1 = 4)**

1. The ore of which metal is calamine? (1)

2. Which one of the following ions is attracted towards the cathode? (1)
(Chloride ion, Oxide ion, Fluoride ion, Sodium ion)

3. In which one of the following reversible reactions, the change in pressure does not influence the equilibrium? (1)

   i. $N_{2(g)} + 3H_{2(g)} \rightleftharpoons 2NH_{3(g)}$

   ii. $N_{2(g)} + O_{2(g)} \rightleftharpoons 2NO_{(g)}$

   iii. $2NO_{(g)} + O_{2(g)} \rightleftharpoons 2NO_{2(g)}$

4. The metal which is refined by distillation is _____. (1)
(Sn, Cu, Hg, Pb)

5. Write down the molecular formula of benzene. (1)

Answer any 4 questions from 6 to 10. Each question carries 2 scores. **(4 x 2 = 8)**

6. To extract aluminium, alumina is mixed with cryolite and subjected to electrolysis.

   a. Why is cryolite added to alumina? (1)

   b. Which is the positive ion present in alumina? (1)

7. Analyse the given chemical equation and answer the following questions.

$C_{12}H_{22}O_{11} \xrightarrow{Con\,H_2SO_4} 12C + 11H_2O$

a. Which is the black substance formed during this reaction? (1)

b. Which property of concentrated Sulphuric acid is shown here? (1)

8. Molten Sodium chloride and aqueous Sodium chloride solution are electrolysed separately.

a. Which substance is obtained at the anode in both cases? (1)

b. What is the energy change taking place in an electrolytic cell? (1)

9. Calcination and Roasting are two methods of conversion of concentrated ore into its oxide.

a. How does Roasting differ from Calcination? (1)

b. Cu_2S ore is converted into Cu_2O by _____ process. (1)

10. Write the structural formulae of the following compounds.

a. Pent - 2 - yne (1)

b. But - 1 - ene (1)

Answer any four questions from 11 to 15. Each question carries 3 scores. (4 x 3 = 12)

11. a. Which are the chemicals required for the preparation of ammonia in the laboratory? (1)

b. Which is the drying agent used to remove moisture from ammonia? (1)

c. What change do you observe when a wet red litmus paper is shown over ammonia gas? Which property of ammonia is shown here? (1)

12. C_2H_2, (A), C_4H_6 are the successive three members of the same homologous series.

a. Write the molecular formula of the compound A. (1)

b. What is the difference between the number of Carbon atoms and Hydrogen atoms in any two successive members. (1)

c. To which category does this homologous series belong? (Alkane, Alkene, Alkyne) (1)

13. Gold is coated over a copper spoon by electrolysis.

a. Name this process. (1)

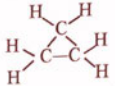
b. Which metal is connected to the positive terminal of the battery? (1)

c. Which is the electrolyte used here? (1)

14. Complete the table. (3)

Characteristics of Ore	Method of Concentration
i. Ore particles are lighter than the impurities	.....(a).....
ii. Ore particles are heavier than the impurities	.....(b).....
iii. Ore and impurities do not dissolve in the same solvent	.....(c).....

15. The structure of an alicyclic hydrocarbon is given.



a. Write the molecular formula of this compound. (1)

b. Write its IUPAC name. (1)

c. Write the structural formula of the open chain hydrocarbon having the same molecular formula. (1)

Answer any four questions from 16 to 20. Each question carries 4 scores. (4 x 4 = 16)

16. Haematite is converted into iron in the blast furnace.

a. What are the substances fed into the blast furnace along with haematite? (1)

b. Which is the main gangue present in haematite? (1)

c. Which compound acts as the reducing agent in the blast furnace? (1)

d. Write the chemical equation showing the reduction reaction of haematite. (1)

17. a. From the given statements, select the correct statements regarding chemical equilibrium. (2)

i. Chemical equilibrium is static at the molecular level.

ii. Both reactants and products co-exist.

iii. The rates of forward and backward reactions are equal.

iv. Chemical equilibrium is attained in an open system.

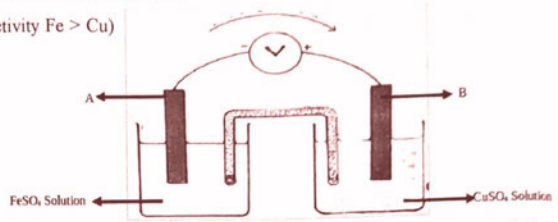
b. How does the following conditions affect a reversible reaction?

i. More reactants are added. (1)

ii. Products are removed. (1)

18. The given diagram represents a galvanic cell.

(Hint : Order of reactivity Fe > Cu)



a. Identify the metals A and B. (1)

b. Which metal acts as the anode? (1)

c. Write down the equation showing the reduction reaction taking place in the cell. (1)

d. Write the direction of flow of electrons. (1)

19. An incomplete flow chart of the industrial preparation of Sulphuric acid is given below

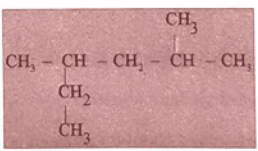
a. Name the process of industrial preparation of Sulphuric acid. (1)

b. Identify X and Y. (1)

c. Which is the catalyst used in this process? (1)

d. Which is the acid produced by the reaction of $Con.H_2SO_4$ with KNO_3? (1)

20. The structural formula of a hydrocarbon is given below.



a. How many carbon atoms are there in the main chain? (1)

b. Name the branches present. (1)

c. Identify the position number of branches. (1)

d. Write the IUPAC name of this compound. (1)