

SECOND MID TERM EXAMINATION: 2023 - 24
CHEMISTRY X

Max. Score: 20

Time: 45 minute

- Answer any two questions from 1 to 3. Each carries 1 score
- Find out the one which doesn't belong to the group? How does it differ from others?
(Haematite, Cryolite, Clay, Bauxite)
 - In a chemical reaction, the change that occurs to an element 'A' is shown below.
 $A \rightarrow A^{2+} + 2e$
Here the element 'A' undergoes (Oxidation/Reduction)
 - Find out the relation of the first pair and complete the second pair accordingly.
Lead: liquifaction; Zinc:

- Answer any two questions from 4 to 6. Each carries 2 score
- a. Write an example of an ore of zinc that can be concentrated by froth flotation.
b. Explain why froth flotation is a suitable method for concentrating this ore.

- a. Which mineral is known as fool's gold?
b. Why is it known as such?

- Before the extraction of metal, the ore undergoes either Roasting or Calcination, according to the chemical nature of the ore.
a. What is the difference between the two process?
b. If the ore is a carbonate, which process is preferred?

Answer any two questions from 7 to 9. Each carries 3 score

- Check whether the following statements are True or False.

- a. During electrolysis, cations are attracted towards the cathode.
b. In a galvanic cell, the highly reactive electrode acts as the cathode.
c. In a galvanic cell, electrical energy is converted to chemical energy.

- One wishes to construct a galvanic cell. He has collected a Zinc rod and a Copper rod for this.

- a. What else does he need to collect?
b. Draw a diagram of the galvanic cell he can create, and label the anode, cathode, and the direction of electron flow in it.

- Write the one word answer to the questions about the industrial production of Aluminium.

- a. Name the method of concentration of bauxite?
b. What is called industrial production of Aluminium?
c. What is used as anode in this process?
d. Name the gas releases at the anode during electrolysis.
e. Which is the ion that moves towards Cathode?
f. Name the ion that undergoes reduction.

Answer any two questions from 10 to 12. Each carries 4 score

- The blast furnace is used to produce iron industrially.

- a. Write the equation of the reduction of Haematite.
b. What is slag, and what is the equation for its formation inside the furnace?
c. Give the names and uses of two alloys of Iron.
d. What is pig iron?

- a. What are the products obtained by the electrolysis of molten sodium chloride?
b. Write the equations taking place at the cathode and anode.

- c. What will be the products obtained if aqueous solution of sodium chloride is used instead of molten sodium chloride?

- a. What is reactivity series?

- b. Is Mg or Cu coming above in the reactivity series?

- c. If a magnesium rod is dipped in a copper sulphate solution, is there a possibility of a displacement reaction? Justify.

- d. Give the equation of oxidation reaction.