



## M.Tech. III Semester Degree Examination, April/May - 2024

### MINERAL PROCESSING

#### Non Ferrous Extractive Metallurgy

#### (NEP)

Time : 3 Hours

Maximum Marks : 70

**Note** : (i) Answer **any five** of the following questions.

(ii) Each question carries **equal** marks.

(iii) Question number **1 is compulsory**.

1. Significance of unit process such as drying and calcining in pyrometallurgical process. **8**
2. What is Smelting ? Explain reduction smelting. **6**
3. What is Roasting ? Explain the types of Roasting Process. **6**
4. Describe pyro-metallurgical extraction of copper. **8**
5. Distinguish between the matte smelting and reduction smelting. **6**
6. What is Refining ? Explain any one method of refining. **8**
7. With the help of flow sheet, describe the hydrometallurgical route for the extraction of Zinc. **8**
8. Explain acid leaching and alkali leaching with example. **6**
9. Difference between the Electro winning and electro refining. **6**
10. What is leaching ? Give a brief note on different types of leaching operations. **8**
11. Name the ores of zinc. Describe the hydro metallurgical process for the extraction of zinc from its ore. Give the flow sheet. **8**
12. What are the properties of gold and uses of gold. **6**



- 13.** What are the sources of Nickel ? Explain the steps involved in the extraction of nickel from its concentrate. **8**
- 14.** Explain the Thermodynamics of Roasting. **6**
- 15.** Mention the properties required of an electrolyte. **6**
- 16.** What are the common reagents used in leaching ? How do you select them ? **8**

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