



**M.Sc./M.Tech. IV Semester Degree Examination,
Sept./Oct. - 2024**

MINERAL PROCESSING

Ferrous Extractive Metallurgy

(NEP)

Time : 3 Hours

Maximum Marks :70

Note : Answer **any five** of the following questions with question **No.1 is Compulsory.**

1. (a) Compare the processes of sintering and pelletizing iron ore. **7**
(b) What are the advantages and disadvantages of each method ? **7**
2. (a) Describe the process of drying, preheating, firing and cooling zones of indurating the green balls. **7**
(b) Write down three different water particle systems. **7**
3. (a) Explain the role of the reduction shaft and melter-gasifier in the COREX process. **7**
(b) What are the different types of fluxes used in Blast Furnace, and how do they contribute to the process ? **7**
4. (a) Write a note on raw materials required for steel making. **7**
(b) Explain the mechanism and purpose of deoxidization in steel making. **7**
5. Explain the Electric Arc Furnace (EAF) steel making process. **14**
6. Describe the reactions taking place in the stack, bosh and hearth of a blast furnace. What do you mean by direct and indirect reduction ? **14**
7. (a) What is meant by Continuous casting of steel ? Describe the different types of machines used for continuous casting of steel. **7**
(b) What are ferro alloys and why are they important in steel making ? Describe the basic process of producing a common ferro alloy, such as ferrochromium. **7**
8. Provide a diagrammatic representation of the MIDREX Process for the production of sponge iron and briefly explain the major components involved in the process. **14**

- o o o -

