

III B.Tech II Semester Supplementary Examinations, Apr/May 2006**IRON PRODUCTION****(Metallurgy & Material Technology)****Time: 3 hours****Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Explain the Dwight Lloyd sintering machine in the modern Iron making. [8]
(b) What are the parameters, which affect the efficiency of sintering machines? Explain [8]
2. (a) Mention all the parts of a blast furnace. Explain any one of them. [9]
(b) What are the chief causes of blast furnace refractory failure? Explain. [7]
3. (a) Explain the construction of a blast furnace stove with its accessories. [7]
(b) What are the benefits of cleaning of blast furnace gas? [4]
(c) What are the advantages and disadvantages of hoisting appliances of a blast furnace? [5]
4. (a) Comment on the reactions in hearth region of a blast furnace. [6]
(b) Write short notes on the following:
i. Sulphur reaction in blast furnace [5]
ii. Alumina problem in blast furnace [5]
5. (a) What are the basic functions of the slag in a modern blast furnace? [6]
(b) What are the various constituents of blast furnace slags? [3]
(c) What are the effects of CaO, SiO₂, AlO₃&MgO on fluidity of slags? [7]
6. (a) What are the precautions to be taken for a newly lined blast furnace? [7]
(b) Describe the process of 'Banking' in blast furnace. [9]
7. (a) What are the latest developments in Bell construction and operation in the modern blast furnace? Describe them [8]
(b) What are the advantages of 'Higher blast temperature' in blast furnace? [4]
(c) What is the importance of oxygen enrichment of blast in the blast furnace? [4]
8. (a) Describe the HyL process of sponge Iron production. [6]
(b) Explain the advantages and disadvantages of HyL process of sponge Iron production [5]
(c) Explain the future of DR technology of Iron making. [5]
