

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEM-VII Examination-Nov/Dec.-2011

Subject code: 172106**Date: 29/11/2011****Subject Name: Advance Ferrous Metallurgy****Time: 10.30 am-01.00 pm****Total marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) List the factors affecting reduction rate of iron ore and explain any two in detail. **07**
(b) What are the problems of Indian steel plant? Explain. **07**

- Q.2** (a) With labeled diagram of blast furnace explain the reactions occurring in blast furnace. **07**
(b) Write detailed note on mechanisms of kinetics of iron oxide reduction in blast furnace. **07**

OR

- (b) Discuss high temperature properties of iron bearing materials. **07**

- Q.3** (a) How the high temperature and oxygen enrichment of blast improves the performance of blast furnace? **07**
(b) Discuss in detail about pulverized coal injection. **07**

OR

- Q.3** (a) With a neat sketch explain the advantage of mini blast furnace. **07**
(b) Discuss about the role of synthetic slag in iron and steel making. **07**

- Q.4** (a) Write short note on ferrochrome production. **07**
(b) With neat diagram of EAF explain the production of steel. **07**

OR

- Q.4** (a) Write a short note on sponge iron production. **07**
(b) Discuss in detail about AOD process of secondary steel making. **07**

- Q.5** (a) Discuss continuous casting process. **07**
(b) Write short note on electro slag refining. **07**

OR

- Q.5** (a) Discuss the refractories of blast furnace. **07**
(b) Write short note on reduction smelting process. **07**
