

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER V • EXAMINATION – WINTER - 2012****Subject code: 152101****Date: 11-01-2013****Subject Name: Iron Making****Time: 02:30 pm to 05:00 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) What are different raw materials of Iron Making? Discuss their evaluation. **07**
(b) Draw neat and proportionate sketch of blast furnace. Label it properly and discuss different refractory lining in furnace. **07**
- Q.2** (a) Discuss objectives and variables of sintering process. **07**
(b) What is pelletization? Explain theory of bonding and mechanism of ball formation in pelletization. **07**
- OR**
- (b) Discuss different reactions taking place in different zones of blast furnace. **07**
- Q.3** (a) Write short note on Raceway Adiabatic Flame Temperature. **07**
(b) Discuss different charging system in blast furnace iron making. **07**
- OR**
- Q.3** (a) What is sintering? Discuss the mechanism of sintering process. **07**
(b) What is humidification of blast in iron making? Discuss its advantages. **07**
- Q.4** (a) Explain effects and advantages of high top pressure in blast furnace iron making. **07**
(b) What are different blast furnace irregularities and remedial measures? **07**
- OR**
- Q.4** (a) Explain kinetics of iron-oxide reduction. **07**
(b) Explain importance of burden distribution in relation to the productivity of blast furnace. **07**
- Q.5** (a) What are different alternative iron making processes? Explain Midrex process. **07**
(b) Discuss use of high temperature blast and its effect on coke rate and metal-impurity distribution in slag and metal. **07**
- OR**
- Q.5** (a) Write note on pulverized coal injection. **07**
(b) Discuss salient features of Miniblast furnace. **07**
