Seat No.:	Enrolment No.

## GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-V • EXAMINATION – SUMMER • 2015

Subject code:152101 Date: 02/05/2015 **Subject Name: Iron Making** Time: 02.30pm-05.00pm **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. (a) What are different raw materials of Iron Making? Discuss their 0.1 07 evaluation **(b)** What is the role of coke and limestone in iron making? Explain 07 0.2 Draw neat sketch of blast furnace and label it properly 07 Explain importance of burden distribution in relation to the 07 Productivity of blast furnace. OR **(b)** Discuss about Indian iron ores. **07 07** 0.3 What is sintering? Briefly discuss sintering process (a) What is pelletization? Explain theory of bonding and mechanism of ball **07** formation in pelletization OR What is basicity? Discuss importance of maintaining basicity in Iron **Q.3 07** (a) making. What are different refractories used in blast furnace? Discuss them 07 **(b) Q.4** (a) List the factors affecting charge distribution in blast furnace. Discuss any **07 (b)** Write Short Notes of the following: 03 +(1) Bell less charging system (2) RAFT (3) Pulverized coal injection 02 +02 OR (a) Discuss blast furnace reactions in-Stack, Tuyere, Bosh and Hearth **Q.4** 07 Discuss the conditions of effective De-siliconization and De-**(b) 07** Phosphorisation in Blast furnace (a) Explain effects and advantages of high top pressure in blast furnace 0.5 Iron making. 07 **(b)** What is humidification of blast in iron making? Discuss its advantages **07** OR **Q.5** (a) What are different alternative iron making processes? Explain Midrex **07** process. (b) What are irregularities in blast furnace operations? Briefly discuss them 07 with remedies

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