

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI • EXAMINATION – WINTER 2013****Subject Code: 162102****Date: 29-11-2013****Subject Name: Steel Making****Time: 02:30 pm to 05:30 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 is an integrated steel plant? Name the plants and products of these plants in India. 7

(b) What is a basic and oxidizing slag? Explain its role in steel making. 7

Q.2 (a) Explain the factors for time required to produce a “Heat” in Basic Oxygen Furnace and in an Electric Arc Furnace. 7

(b) Discuss various conditions for removal of Phosphorous during steel making 7

OR

(b) Describe a double slag practice in electric arc furnace steel making. 7

Q.3 (a) Explain “LD-AC” process of steel making. What is the use of LD-AC process slag? 7

(b) Explain use of single nozzle and multi nozzle lance in steel making. 7

OR

Q.3 (a) Discuss the main requirements of “Deoxidizer” in steel making. Explain the purpose and mechanism of its working. 7

(b) Describe metallurgical characteristics of “LD” process of steel making. 7

Q.4 (a) Why process control is critical in “BOF” process? Discuss how it is done? 7

(b) Describe “ASEA-SKF” process of steel treatment. 7

OR

Q.4 (a) Explain AOD process for stainless steel manufacturing 7

(b) Describe RH degassing process for steel refinement with neat sketch 7

Q.5 (a) Explain advantages and drawbacks of “OBM” process of steel making. 7

(b) Describe “Perrin process” of steel treatment and its use. 7

OR

Q.5 (a) Explain various features of Mould and Submerged entry nozzle used in continuous casting of steel. 7

(b) Compare ESR and VAR processes of steel treatment. 7