

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI • EXAMINATION – SUMMER • 2014****Subject Code: 162102****Date: 21-05-2014****Subject Name: Steel Making****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) Give names of the processes in which oxygen, oxygen + lime and Oxygen + hydro carbon are used. **07**
- (b) With the help of schematic show various latest routes of steelmaking **07**
- Q.2** (a) Compare LD process and LD-AC process with Neat diagram. **07**
- (b) Explain: Reaction at slag metal interface. **07**
- OR**
- (b) Discuss the advantages and disadvantages of top and bottom blown processes **07**
- Q.3** (a) Discuss the various components of Electric Arc furnace and discuss in brief, EAF practice for carbon and low alloy steel **07**
- (b) Explain in brief, the effect of Sulphur, Phosphorous and gases in Steel **07**
- OR**
- Q.3** (a) List Design Improvements in modern EAF practice. Discuss briefly about UHP arc furnaces. **07**
- (b) Explain briefly **07**
- (i) Carbon Reaction (ii) Phosphorous Reaction (iii) Sulphur Reaction
- Q.4** (a) Explain Ladle Refining process and its uses. **07**
- (b) What are the benefits of Secondary Steel Making processes? also **07**
- Mention few examples of steels subjected to Secondary Steel Making processes
- OR**
- Q.4** (a) Explain with thermodynamic point of view, Under which conditions, Desulphurization and Dephosphorization reactions are achieved? **07**
- (b) Compare AOD and VOD processes of Steel Making **07**
- Q.5** (a) Explain the following with neat diagram. **07**
- (i) Electro-slag Refining process and its benefits. (ii) R-H degassers
- (b) Define “inclusions”. Explain what is the effect of inclusions on mechanical Properties of steel. **07**
- OR**
- Q.5** (a) Explain the difference in structure by Ingot Casting and Continuous Casting method **07**
- (b) List the defects in Con-cast products. How they can be controlled **07**
