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Total number of printed pages – 2

B. Tech  
PCMT 4402

**Seventh Semester Examination – 2013**

**STEEL MAKING**

**BRANCH : MME**

**QUESTION CODE : C-279**

**Full Marks – 70**

**Time : 3 Hours**

*Answer Question No. 1 which is compulsory and any **five** from the rest.*

*The figures in the right-hand margin indicate marks.*

1. Answer the following questions : 2×10
- (a) What do you mean by cementation process of steel making ?
  - (b) What is catch carbon technique ?
  - (c) What is twin hearth process ?
  - (d) Explain the role of JFN on dephosphorisation reaction in LD.
  - (e) What is Soderberg electrode of EAF ?
  - (f) Differentiate between the active and inactive mixture of a steel plant.
  - (g) When LD was available, Thomas process came in trouble- Justify.
  - (h) Briefly explain the effect of non-metallic inclusions on the quality of steel.
  - (i) What is the importance of SEN in continuous casting of steel ?
  - (j) Give a typical composition of Indian pig iron.
2. (a) Describe the required properties of hot metal to be used as a raw material in LD converter. 5
- (b) Explain the sequence of impurity elimination in LD process with suitable sketches. 5

**P.T.O.**

3. (a) Briefly describe the salient features of open hearth process. 5  
(b) Explain the constructional details and modern developments of OBM process. 5
4. Explain, in detail, the duplex process of stainless steel technology. 10
5. (a) Describe the principle of vacuum degassing with special reference to R-H process. 5  
(b) Briefly describe the essential details of curved mould continuous casting machine. 5
6. (a) Give the advantages of DRI over scrap as a raw material in EAF. 5  
(b) Describe the importance of different process types known by their slags in EAF. 5
7. (a) Classify and differentiate various steel making processes w.r.t. slag type and furnace design. 5  
(b) Describe the carbon reaction and its importance in steel making. 5
8. Write short notes on any **two** : 5×2  
(a) Molecular theory of slag  
(b) Oxidation and reduction of phosphorous  
(c) CLU process  
(d) Deoxidation practices.

