C09-MET-404

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BOARD DIPLOMA EXAMINATION, (C-09)

APRIL/MAY—2015

DMET—FOURTH SEMESTER EXAMINATION

STEEL MAKING

Time : 3 hours] [*Total Marks* : 80

PART—A

3×10=30

Instructions : (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Differentiate between active mixer and inactive mixer used in steel making.
2. Write the advantages of open-hearth process over Bessemer process.
3. Write the advantages of using pure oxygen in steel making process.
4. List out the raw materials required for steel making by using L.D process.
5. What are the advantages of using induction furnace for steel making process?
6. Write the raw materials required for electric furnace steel making.
7. Write the objectives of secondary steel making.
8. List out the gases dissolved in liquid steel. Write their effects on the properties of steel.

9. Define rimmed steel and capped steel.

10. Write the principle of continuous casting of liquid steel.

PART—B

10×5=50

Instructions : (1) Answer *any* **five** questions.
(2) Each question carries **ten** marks.
(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Explain steel making by basic Bessemer process w.r.t. *(a)* raw materials, *(b)* converter lining, *(c)* principle and process, and *(d)* properties of steel produced.

12. Explain the following recent trends in open-hearth process of steel making :
    (a) Ajax process
    (b) Twin-hearth process

13. *(a)* Explain the construction details and design of the lance in LD process of steel making.
    (b) Explain the chemistry of steel making by LD process.

14. Explain steel making by electric arc furnace w.r.t. *(a)* raw materials, *(b)* lining details, *(c)* electrode materials, and *(d)* process.

15. Describe the following remelting practices of secondary steel making :
    (a) ESR process
    (b) VAR process

16. Explain the ladle degassing process with the help of neat sketch.

17. Explain any five ingot defects w.r.t. *(a)* causes and *(b)* remedies.

18. *(a)* Explain, in detail, the curved mold continuous casting machine with neat sketch. 8
    (b) What are the advantages of it? 2

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