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15009-MET-018

C14-MET-406

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BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL-2017
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 the active mixer and inactive mixer.
- ✓ 2. List the types of steels produced in open-hearth process.
- ✓ 3. State the advantages of using pure oxygen in steelmaking.
- ✓ 4. Draw the sequence of elimination of impurities in LD process.
- ✓ 5. State the principle of induction furnace.
- ✓ 6. Classify the electric furnaces.
- ✓ 7. Classify the degassing processes.

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- ✓ 8. State the objectives of secondary steelmaking.
- ✓ 9. State the advantages of continuous casting.
- ✓ 10. Define the term 'Ferroalloy' and state the uses of ferroalloys.

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 the chemistry of steelmaking process of the following : 5+5
(a) Theories of slag
(b) Oxidation of C, Si, Mn and P
12. Explain the construction and operation of basic open-hearth furnace.
- ✓ 13. Explain the operation of LD process with chemical reactions.
- ✓ 14. Explain the melting practice of EAF for the production of carbon steels.
- ✓ 15. Explain the stream degassing process and state its advantages.
16. Explain the ESR process with a neat sketch.
- ✓ 17. Explain various methods of teeming with sketches.
- ✓ 18. Explain the submerged arc furnace production of Ferrosilicon.
