



C20-MET-305

7291

**BOARD DIPLOMA EXAMINATION, (C-20)
OCTOBER/NOVEMBER—2023**

DMET - THIRD SEMESTER EXAMINATION

IRON 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. List out any three iron ores and their composition.
2. Define agglomeration.
3. Define blast furnace burden.
4. List out the charging methods of raw materials in blast furnace.
5. Define the term useful volume of blast furnace.
6. List out the sections in blast furnace plant.
7. State the favourable conditions for removal of sulphur.
8. Define slag basicity.
9. State the necessity of alternative methods of pig iron production.
10. State the advantage of large capacity furnaces.

PART—B

8×5=40

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

11. (a) Explain the construction and operation of Dwight Lloyd sintering machine.

(OR)

(b) Explain the factors in the evaluation of ores.

12. (a) Explain the lining details of blast furnace.

(OR)

(b) Explain the reactions in various zones of blast furnace with a neat sketch.

13. (a) Draw the layout of blast furnace plant and explain various sections.

(OR)

(b) Explain the construction and operation of hot blast stove with neat sketch.

14. (a) Explain the method of starting the blast furnace operation.

(OR)

(b) Explain causes and remedies of any four irregularities in blast furnace operation.

15. (a) Explain the physical chemistry of DRI process with a neat sketch of rotary kiln.

(OR)

(b) Explain the production of DRI by midrex process.

PART—C

10×1=10

- Instructions :** (1) Answer the following question.
(2) The question carries **ten** marks.
(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

16. How the combined effect of (a) oxygen enrichment and (b) humidification of blast reduces the coke consumption in blast furnace operation?

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