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10ME/AU35

Third Semester B.E. Degree Examination, Dec.2013/Jan.2014
Manufacturing Process – I

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting
at least TWO questions from each part.**

PART – A

- 1 a. List and briefly explain the different steps involved in a casting process. (08 Marks)
- b. Discuss in detail the different materials used in making a pattern. (06 Marks)
- c. Briefly discuss the importance of binders and additives used in sand moulding. (06 Marks)
- 2 a. List the types of moulding sand. Discuss the desirable properties of moulding sand. (08 Marks)
- b. With neat sketch, explain jolt type moulding machine. (07 Marks)
- c. List casting defects. Discuss any two. (05 Marks)
- 3 a. With neat sketches, describe the shell moulding process. List advantages of the process. (10 Marks)
- b. What is die-casting? With a neat and labeled sketch, explain cold chamber diecasting process. (10 Marks)
- 4 a. With neat sketch, show the construction details of a Cupola furnace. Also indicate different zones and write the reactions taking place in each of the zones. (10 Marks)
- b. With neat sketch, explain the working of a direct arc electric furnace. (10 Marks)

PART – B

- 5 a. Explain the following, with neat sketches:
i) Submerged arc welding.
ii) Oxy-acetylene welding.
and their field of applications. (12 Marks)
- b. With neat sketch, explain forward and backward welding methods. (08 Marks)
- 6 a. With neat sketches, explain the following:
i) Seam welding
ii) Projection welding. (12 Marks)
- b. With a sketch, explain the electron beam welding process and mention its applications. (08 Marks)
- 7 a. With neat sketch, explain heat affected zone (HAZ) and its various regions. (10 Marks)
- b. Explain the different welding defects, their causes and remedies. (10 Marks)
- 8 a. What is non-destructive testing? Explain with neat sketch ultrasonic inspection and its application areas. (10 Marks)
- b. With neat sketch, explain fluorescent particle inspection process and its application areas. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

Highly

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