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10ME/AU/TL35

Third Semester B.E. Degree Examination, June/July 2013
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. Explain the basic steps involved in a casting process. (06 Marks)
b. What are pattern allowances? Explain any two. (05 Marks)
c. What are additives? List the various additives used in moulding sand. (04 Marks)
d. Explain with neat sketch sweep pattern. (05 Marks)
- 2 a. Describe the desirable properties of a moulding sand. (06 Marks)
b. What are the casting defects? Explain any two. (06 Marks)
c. With neat sketch, explain Jolt-squeeze moulding machine. (08 Marks)
- 3 a. Explain briefly the following with sketches:
i) CO₂ – moulding ii) Shell moulding. (10 Marks)
b. Explain the following with neat sketch,
i) Centrifuging ii) Squeeze-casting. (10 Marks)
- 4 a. Explain the construction and working of direct electric arc furnace. List the advantages. (10 Marks)
b. Explain with neat sketch working principle of resistance furnace. List the advantages, disadvantages and applications. (10 Marks)

PART – B

- 5 a. Define welding. Give classification of welding process. (06 Marks)
b. Explain Inert Gas Metal Arc Welding (MIG) and Atomic hydrogen welding process. (08 Marks)
c. Explain briefly forward and backward welding methods in gas welding. (06 Marks)
- 6 a. Explain the principle of seam welding with neat sketch. (06 Marks)
b. With neat sketch, explain projection welding process. List the advantages of projection welding. (08 Marks)
c. With neat sketch, explain explosive welding process. List the applications. (06 Marks)
- 7 a. Discuss the factors affecting weldability of metals. (06 Marks)
b. Explain the parameters affecting Heat Affected Zone (HAZ) briefly. (06 Marks)
c. Explain briefly welding defects and its causes. (08 Marks)
- 8 a. Compare soldering and brazing processes. Mention their advantages and disadvantages. (10 Marks)
b. What is NDT? Explain radiography and Eddy current method of inspection of metals. (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.