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10ME/AU35

Third Semester B.E. Degree Examination, June/July 2016

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. Classify manufacturing processes. Explain factors to be considered while selecting a process for a given application. (10 Marks)
- b. List the various types of patterns. Explain the different types of pattern allowances, with neat sketches. (10 Marks)
- 2 a. List the types of moulding sand. Discuss the desirable properties of moulding sand. (10 Marks)
- b. With a neat sketch, explain the working principle of Jolt and Squeeze moulding machine. (10 Marks)
- 3 a. With a neat sketch, explain the different steps involved in shell moulding process and mention its advantages and disadvantages. (10 Marks)
- b. Name the centrifugal casting methods. With a neat sketch, explain the working of vertical and horizontal type centrifugal casting processes. (10 Marks)
- 4 a. With a neat sketch, explain coreless induction furnace and mention its merits and demerits. (10 Marks)
- b. Sketch and explain the construction and operation of a cupola. (10 Marks)

PART – B

- 5 a. With a neat sketch, explain Thermit welding process. Mention its merits and demerits. (10 Marks)
- b. Explain with sketches, the forward and backward welding methods. (10 Marks)
- 6 a. Explain projection welding process with a sketch. List out the advantages of projection welding. (10 Marks)
- b. Explain briefly the following with sketches:
 - i) Seam welding
 - ii) Explosive welding
 (10 Marks)
- 7 a. What is meant by HAZ? Explain the various regions of HAZ in low carbon steel during welding. (10 Marks)
- b. Discuss the various types of welding defects, their causes and remedies. (10 Marks)
- 8 a. Differentiate between brazing and soldering. List out merits, demerits and applications of these two processes. (10 Marks)
- b. Explain the magnetic particle inspection method to test welded part with advantages and limitations. (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.