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10ME/AU/IP/IM/MA/PM35

Third Semester B.E. Degree Examination, Dec.2014/Jan.2015
Manufacturing Process - I

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, selecting atleast TWO questions from each part.

PART - A

- 1 a. Briefly explain the steps involved in metal casting process, with a neat flow diagram. (10 Marks)
b. List the types of patterns and explain any 3 of them, with neat sketches. (10 Marks)
- 2 a. What are the desirable properties of moulding sand? (05 Marks)
b. Explain briefly the different casting defects during casting process. (05 Marks)
c. With a neat sketch, explain the working principle of Jolt & Squeeze moulding machine. (10 Marks)
- 3 a. With a neat sketch, explain the steps involved in shell moulding. (10 Marks)
b. What are the steps involved in investment casting? Explain in brief, with neat sketches. (10 Marks)
- 4 a. Explain the construction and working principle of 'CUPOLA' furnace, with neat sketch. (12 Marks)
b. Explain with a neat sketch, working of coreless induction furnace. (08 Marks)

PART - B

- 5 a. Sketch and explain TIG welding process and its application. (07 Marks)
b. Explain with a neat sketch, the Submerged Arc Welding (SAW) process. (07 Marks)
c. With a neat sketch, explain the Oxy - acetylene gas welding process. (06 Marks)
- 6 a. Sketch and explain the Thermit welding process and mention the advantages, disadvantages and applications. (10 Marks)
b. With a neat sketch, explain the Laser Beam welding process and mention its advantages, disadvantages and applications. (10 Marks)
- 7 Write short notes on :
 - a. Residual stresses in welding.
 - b. Electrode using in welding.
 - c. Welding defects.
 - d. HAZ in welding. (20 Marks)
- 8 a. Differentiate Soldering and Brazing. (05 Marks)
b. What are the different Non - Destructive Testing (NDT) methods and explain with neat sketches of Magnetic Particle Inspection and Radiographic Inspection method. (15 Marks)

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.