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10ME/AU/PM/TL35

**Third Semester B.E. Degree Examination, June 2012**  
**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 different pattern allowances. (06 Marks)  
b. List out different patterns, explain any two of them. (08 Marks)  
c. Explain the need and properties of additives. (06 Marks)
- 2 a. What CO<sub>2</sub> moulding? (06 Marks)  
b. Compare : i) Jolt machine moulding and ii) Squeeze machine moulding. (09 Marks)  
c. Explain the working of 'Sand Slinger'. (05 Marks)
- 3 a. Sketch and explain the process 'shell moulding'. (10 Marks)  
b. Explain the process of investment casting, with a neat sketch. (10 Marks)
- 4 a. Write a note on 'Coreless induction furnace' highlighting, i) the working principle ii) merits and demerits. (10 Marks)  
b. With sketch, explain the working of 'cupola' (10 Marks)

**PART – B**

- 5 a. What is 'flux shielded metal arc' welding? (04 Marks)  
b. With a sketch, explain the process of submerged arc welding. (08 Marks)  
c. Sketch and explain 'atomic hydrogen welding'. (08 Marks)
- 6 a. Explain the basic principle of resistance welding. (04 Marks)  
b. With sketch enumerate 'explosive welding processes'. (08 Marks)  
c. What is principle behind electron beam welding? (03 Marks)  
d. Write a note on 'laser welding'. (05 Marks)
- 7 a. Explain the HAZ in welding process. (07 Marks)  
b. How does the shrinkage and residual stress affect the welding joint? (07 Marks)  
c. Write a note on causes and remedies of welding defects. (06 Marks)
- 8 a. Differentiate between: i) welding and soldering ii) soldering and brazing (05 Marks)  
b. Explain "Magnetic particles inspection". (05 Marks)  
c. What is ultrasonic inspection? (05 Marks)  
d. Explain the technique of radiographic inspection. (05 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.