

USN

--	--	--	--	--	--	--	--	--	--

06ME35

Third Semester B.E. Degree Examination, December 2010
Manufacturing Processes - I

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting atleast TWO questions from Part – A and Part – B.

PART – A

- 1 a. Briefly discuss the steps involved in making a casting. (06 Marks)
b. Discuss the different materials used in making a pattern. (06 Marks)
c. What is the need for pattern allowances? Explain each one of them, briefly. (08 Marks)
- 2 a. What are cores? Briefly explain their significance, in the sand moulding process. (05 Marks)
b. Explain with a sketch, the working of a jolt type moulding machine. (07 Marks)
c. With the help of a neat sketch, explain any two different types of gating systems. (08 Marks)
- 3 a. Explain with a sketch, the shell moulding process. (10 Marks)
b. Explain i) centrifugal casting process ii) continuous casting process. (10 Marks)
- 4 a. Describe with a neat sketch, the coreless induction furnace. (08 Marks)
b. Sketch and explain the working of a cupola, with different zones within the coke bed. (12 Marks)

PART – B

- 5 a. Describe the principles of arc welding process. (06 Marks)
b. Explain the following, with a neat sketch :
i) Atomic hydrogen welding ii) Submerged arc welding. (14 Marks)
- 6 a. Explain the principle of resistance welding. Also list the major applications of the process. (06 Marks)
b. With a sketch, explain the process of laser welding. Mention its advantages and limitations. (08 Marks)
c. Describe the principles of seam welding. (06 Marks)
- 7 a. Explain the various regions of HAZ in low carbon steel, during welding. (08 Marks)
b. Write a note on shrinkage and residual stresses in welds. (06 Marks)
c. Explain the different welding defects, their causes and remedies. (06 Marks)
- 8 a. Explain the following types of non destructive methods of inspection, with necessary sketches : i) Magnetic particle inspection ii) Ultrasonic inspection. (14 Marks)
b. Describe the brazing process. List its advantages and limitations. (06 Marks)
