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 Sqeeze 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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