10ME/AU35

Third Semester B.E. Degree Examination, June/July 2017
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. Define the casting process. Explain the different steps involved in casting process. **(08 Marks)**
    b. What is pattern? Explain briefly any two types of pattern allowances. **(06 Marks)**
    c. Write a Note on Binders and Additives used in moulding. **(06 Marks)**

2   a. With a neat figure, explain the Terminologies of sand mould. **(08 Marks)**
    b. What are the desirable properties of moulding sand? **(06 Marks)**
    c. Mention the various casting defects. Explain any two types of defects. **(06 Marks)**

3   a. With a neat sketch, explain the investment moulding process. Mention its advantages. **(10 Marks)**
    b. Define the "Die casting". With a neat sketch, Explain the Hot chamber die casting process. **(10 Marks)**

4   a. With a neat sketch, explain the working principle of electric Resistance Furnace. **(10 Marks)**
    b. Explain the construction and working principle of a cupola Furnace, with a sketch. **(10 Marks)**

PART – B

5   a. Define welding process. What are the advantages and limitations of welding process? List the industrial applications of welding. **(10 Marks)**
    b. With a neat sketch, explain the Tungsten Inert gas welding (TIG) with advantages. **(10 Marks)**

6   a. With a neat sketch, explain the Resistance Butt welding process with its applications. **(10 Marks)**
    b. With a sketch, explain the electron beam welding. Mention its applications. **(10 Marks)**

7   Write short notes on :
    a. Different zones in welding
    b. Parameter affecting HAZ
    c. Effects of Residual stresses
    d. Welding defects. **(20 Marks)**

8   a. Compare the soldering and Brazing processes. **(05 Marks)**
    b. What is NDT? With neat sketches, explain the magnetic particle and ultrasonic testing techniques. **(15 Marks)**

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