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10AE35

Third Semester B.E. Degree Examination, Dec.2014/Jan.2015
Manufacturing Processes

Time: 3 hrs.

Max. Marks: 100

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

PART - A

1.
 - a. Give the complete classification of manufacturing processes. (06 Marks)
 - b. What are the main advantages and disadvantages of casting process? (06 Marks)
 - c. What are pattern allowance? Explain the following pattern allowances (08 Marks)
 - i) Shrinkage allowance
 - ii) Machining allowance
 - iii) Distortion allowance.
2.
 - a. What are the desirable properties of moulding sand? (04 Marks)
 - b. What are cores? How are they classified? (07 Marks)
 - c. Write the causes and remedies for the following casting defects : (09 Marks)
 - i) Shrinkage defect
 - ii) Porosity
 - iii) Mould Shift.
3.
 - a. Sketch and explain sweep moulding process. (06 Marks)
 - b. Explain cold chamber die casting process, with the help of neat sketch. (10 Marks)
 - c. What are the advantages and disadvantages of investment moulding process? (04 Marks)
4.
 - a. How do you define welding? Give the complete classification of welding process. (08 Marks)
 - b. Explain different types of flames and their characteristics in gas welding. (12 Marks)

PART - B

5.
 - a. List the differences between soldering and brazing. (06 Marks)
 - b. What are the steps involved in dye penetrant test? Explain. (06 Marks)
 - c. Write a short note on the following : (08 Marks)
 - i) Visual inspection
 - ii) Fluorescent penetrant inspection.
6.
 - a. Show the nomenclature of a single point cutting tool, highlighting the significance of different angles. (10 Marks)
 - b. In turning of a steel rod by a given cutting tool at a given machining condition under a given environment, the tool life decreases from 80 min to 20 min, due to increase in cutting velocity from 60m/min to 120m/min, then at what cutting velocity the life of that tool under the same condition and environment will be 40 min. (10 Marks)
7.
 - a. What are the essential properties for cutting tool materials? (06 Marks)
 - b. What are the desirable properties of cutting fluids? (06 Marks)
 - c. What are the sources and causes of heat generation in machining? (04 Marks)
 - d. What are the advantages of coated carbides over other cutting tool materials? (04 Marks)
8.
 - a. Differentiate between traditional and non traditional machining processes. (04 Marks)
 - b. Explain the principle of operation and applications of the following non – traditional machining processes with help of neat sketches. (16 Marks)
 - i) Laser beam machining
 - ii) Electro – chemical machining.
