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10ME757

Seventh Semester B.E. Degree Examination, Dec.2018/Jan.2019
Automation Manufacturing

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1 a. Define Automation and justify use of automation system in industry. (10 Marks)
 b. With neat figure, explain Automation Migration strategy. (10 Marks)
- 2 a. Classify Manufacturing operations and explain each briefly. (10 Marks)
 b. The following data are given for a work center consisting of one worker and one machine :
 Direct labor rate = Rs 10/hr ; Applicable factory overhead rate on labor = 60% ;
 Capital investment in machine = Rs 100000/- ; Service life of the machine = 8 years ;
 Rate of return = 20% ; Salvage value in 8 years = 00 and Applicable factory overhead rate
 on machine = 50% ; The work centre will be operated one = 8 hr shift , 250 day/year.
 Determine the appropriate hourly rate for the work centre. (10 Marks)
- 3 a. What are the basic elements of an automated system? Explain with block diagram. (12 Marks)
 b. Explain advanced automation functions briefly. (08 Marks)
- 4 a. Explain classification scheme for Manufacturing System. (10 Marks)
 b. What is a Single Station Automated Cell? List its benefits. (10 Marks)

PART – B

- 5 a. What is Group Technology? Discuss significant obstacles to the application of Group Technology (GT). (04 Marks)
 b. What is Production Flow Analysis (PFA)? Explain the basic steps involved in PFA. (08 Marks)
 c. List and explain the components of Flexible Manufacturing System (FMS). (08 Marks)
- 6 a. Explain the modern view of Quality Control. (08 Marks)
 b. What is a robust design in Taguchi's Quality Engineering? (06 Marks)
 c. Write a note on Just in Time (JIT) production concept. (06 Marks)
- 7 a. Explain construction and working of Coordinate Measuring Machine (CMM). (12 Marks)
 b. Explain Non contact Non optical Inspection Techniques. (08 Marks)
- 8 a. Explain Concurrent Engineering and its benefits. (10 Marks)
 b. Explain Advanced Manufacturing Planning. (10 Marks)

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.