

CBCS Scheme

USN

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

16MAR14

First Semester M.Tech. Degree Examination, Dec.2016/Jan.2017 Automation in Manufacturing Systems

Time: 3 hrs.

Max. Marks: 80

- Note:** 1. Answer FIVE full questions, choosing one full question from each module.
2. Missing data may suitably be assumed.

Module-1

- 1 a. What are the approaches to deal with automation projects? Explain any one approach in detail. (08 Marks)
b. What are the four functions included within the scope of manufacturing support system? Explain in brief. (08 Marks)

OR

- 2 a. Explain fixed and variable cost as a function of production output for manual and automated production method. (08 Marks)
b. A customer order of 50 parts is to be processed through plant, raw-material and tooling are supplied by the customer the total time for processing parts is 100Hr. Direct labour cost is Rs 10.00/hr, the factory overhead rate is 250% and corporate overhead rate is 600%.
i) Compute the cost of the job
ii) What price should be quoted to a potential customer if company uses a 10% markup? (08 Marks)

Module-2

- 3 a. Explain the following production concepts with necessary equations
i) Production capacity (08 Marks)
ii) MLT. (08 Marks)
b. Discuss the concept of product and part complexity. (08 Marks)

OR

- 4 a. What are included in Advanced Automation functions? And explain the function error detection and recovery in detail. (08 Marks)
b. Explain different levels of Automation. (08 Marks)

Module-3

- 5 a. With the help of neat block diagrams explain Regulatory control and feed forward control. (08 Marks)
b. List and explain desirable features for selecting measuring devices used in Automated systems. (08 Marks)

OR

- 6 a. Write short notes on the following :
i) Lean production (08 Marks)
ii) Agile manufacturing. (08 Marks)
b. Explain in brief the Advanced manufacturing planning. (08 Marks)

Important Note: 1. On reuploading 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.

16MAR14

Module-4

- 7 a. With necessary circuit diagram explain how cylinders sequencing can be achieved. (08 Marks)
b. While analyzing a pneumatic circuit, what are the four important considerations that must be taken in to account? Explain in brief. (08 Marks)

OR

- 8 a. Illustrate four major logic control functions used in moving part logic circuits. (08 Marks)
b. With necessary circuit diagram, explain moving part logic control of a single cylinder. (08 Marks)

Module-5

- 9 a. Explain how logic functions can be obtained by combinations of switches. (08 Marks)
b. Write a short note on PLC input and output modules. (08 Marks)

OR

- 10 a. Briefly explain the concept of cost planning and control. (08 Marks)
b. Explain the structural model of a manufacturing process. (08 Marks)

* * * * *