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Seventh Semester B.E. Degree Examination, July/August 2021
Automation in Manufacturing

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1 a. Define automation system. What are the reasons why companies automate their operations? (10 Marks)
b. What is automation migration strategy? Briefly explain three phases of a typical automation migration strategy. (10 Marks)
- 2 a. With block diagram differentiate between manufacturing “processing operation” and “assembly operation”. (14 Marks)
b. Describe “fixed cost” and “variable cost”. (06 Marks)
- 3 a. With a block diagram explain the basic elements of an automated system. (10 Marks)
b. Explain the principles followed in advanced automation function. (10 Marks)
- 4 a. Explain briefly components of “manufacturing systems”. (12 Marks)
b. Describe “single station manned cell”. (08 Marks)
- 5 a. Briefly explain the steps involved in production flow analysis. (10 Marks)
b. Briefly explain FMS planning and implementation issues. (10 Marks)
- 6 a. Discuss the difference between the traditional view of quality control and the modern view. (06 Marks)
b. Explain different types of control charts used to take the decision on the acceptance of attributes and variables. (06 Marks)
c. Explain the robust design in Taguchi’s quality engineering. (08 Marks)
- 7 a. Explain “machine vision” system with diagram. (12 Marks)
b. State, application of “machine vision” system. (08 Marks)
- 8 a. With a block diagram, explain retrieval CAPP systems. (10 Marks)
b. Explain the concepts of just in time production system. (06 Marks)
c. Write a note on lean manufacturing systems. (04 Marks)

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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.