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Roll No.: | | | | | | | | | | |

B.E/B.Tech. (Full Time) DEGREE END SEMESTER EXAMINATION April/May, 2011

INDUSTRIAL ENGINEERING BRANCH

VI- SEMESTER- (REGULATION 2004)

IE 382 – Manufacturing Automation

Time : 3 hours Max. Marks. 100

Answer All Questions

PART 'A' (10 x 2 = 20 Mark)

1. Define automation?
2. Write down the costs involved in manufacturing
3. What is line balancing?
4. What is buffer storage?
5. List the components of an NC system.
6. Name different drive systems used in Robot joints.
7. What is material handling equipment?
8. Name the different types of conveyors?
9. What are the elements of logic control?
10. What is sequencing system?

PART-B (5 x 16 = 80)

11. Explain the strategies for automation and production system (16)

12. a. i) Explain the different types of transfer mechanisms used to move parts between stations in flow lines (8)

ii) Discuss about the parts delivery at work stations of an automated assembly lines. (8)

OR

12. b. i) Explain the different types of transfer mechanisms used to move parts between stations in flow lines (8)

ii) Explain the application of automated production lines in manufacturing process? (8)

13 a) i) Discuss the application of NC (8)

ii) Write short notes on Direct Numerical Control (8)

OR

13 b) i) Explain the types of joints commonly used in industrial robot (8)

ii) Explain the different types of grippers used in industrial robot (8)

14 a) Write down 10 principles of material handling (16)

OR

14 b) Explain the automated storage and retrieval system (16)

15 a) Draw the ladder logic diagram for Lamp circuits and push-button switch and explain it (16)

OR

15 b) What is PLC? Explain the components of PLC (16)