Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 53687

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

Seventh Semester

Robotics and Automation Engineering

RO 6703 – TOTALLY INTEGRATED AUTOMATION

(Regulation 2013)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List the advantages of Totally Integrated Automation.

2. PAC is preferred for process industries. Justify.

3. Identify few requirements of HMI for Industrial Automation.

4. What are panel PCs?

5. Highlight the importance of tags with suitable examples.

6. List the basic functions of SCADA.

7. Give the need for remote telemetry unit in SCADA data communication?

8. What is meant by OLE/OPC specification?

9. Mention the areas to be concentrated by the operator interface in a distributed control system.

10. Contrast the features of distributed Control System and SCADA system.

PART B — (5 × 13 = 65 marks)

11. (a) Briefly explain the types, networks and communication standards of programmable automation controllers with neat sketch.

Or

(b) Demonstrate with the help of flow diagrams a Vertical Integrated Structure?

12. (a) Summarise the need for human machine interface.

Or

(b) Narrate the advantages of integrated PLC and HMI Systems.

13. (a) Construct with a block diagram the elements of a SCADA System.

Or

(b) Describe the various industrial applications of SCADA.

14. (a) Analyze any two protocols employed in SCADA communication.

Or

(b) Highlight the special features of proprietary and open protocols.

15. (a) Elaborate on the elements of Distributed Control System.

Or

(b) Apply the concept of Distributed Control System in any one process control industry.

PART C — (1 × 15 = 15 marks)

16. (a) Discuss a case study of PLE used in industry with neat sketch.

Or

(b) Discuss a case study on HMI system is industry with neat sketch.

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