1063

Code : 15EC61T

Register Number | | | | | | | | | | |

VI Semester Diploma Examination, April/May-2019

INDUSTRIAL AUTOMATION

Time : 3 Hours] **[Max. Marks : 100**

Instruction : (1) Answer any **six** questions from Part – **A**.
(2) Answer any **seven** full questions from Part – **B**.

PART – A

1. Distinguish between TRIAC and SCR. **5**

2. Write neat circuit diagram of SCR being triggered by UJT and explain it. **5**

3. Explain working principle of step-up chopper. **5**

4. Define cycloconverter and summarise the applications of cycloconverter. **5**

5. Explain light Dimmer circuit using DIAC and TRIAC. **5**

6. Explain Burglar Alarm circuit. **5**

7. Explain the block diagram of PLC system. **5**

8. List the features of DCS. **5**

9. Explain second generating architecture of SCADA. **5**

PART – B

10. (a) Explain two transistor analogy of SCR. 6

(b) Define holding current and latching current. 4

11. Sketch and explain full wave bridge controlled rectifier for resistive load with waveforms. 10

12. (a) List the types of Commutation methods. 2

(b) Explain RC triggering method to turn ON SCR with circuit diagram. 8

13. (a) Explain complementary commutation of SCR. 5

(b) Explain Snubber circuit to protect SCR. 5

14. (a) Sketch and explain the working principle of full bridge inverter. 8

(b) Write two applications of inverter. 2

15. (a) Sketch and explain single phase to single phase midpoint cycloconverter. 8

(b) Write two applications of chopper. 2

16. Sketch the block diagram for field control method for speed control of DC shunt motor. 10

17. Write the ladder diagram for basic logic gates and explain. 10

18. (a) Differentiate between relay logic panel and PLC based control panel. 5

(b) Define ladder diagram. Write its parts. 5

19. (a) Explain the hierarchical architecture of DCS. 8

(b) Write two advantages of DCS. 2