

1185

Code : 15EC61T

Register
Number

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VI Semester Diploma Examination, Nov./Dec.-2018

INDUSTRIAL AUTOMATION

Time : 3 Hours]

[Max. Marks : 100

- Note :** (i) Answer any **six** questions from Part – A. ($5 \times 6 = 30$ Marks)
(ii) Answer any **seven** questions from Part – B. ($10 \times 7 = 70$ Marks)


PART – A



Diploma - [All Branches]

Beta Console Education

3+

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| 1. Define : | | 5 |
| (a) Holding current | | |
| (b) Break over voltage | | |
| 2. Explain the construction of IGBT. |  | 5 |
| 3. List the types of commutation methods of SCR. | | 5 |
| 4. Explain pulse triggered SCR using UJT relaxation oscillator. | | 5 |
| 5. Explain the working principle of Half Bridge Inverter. | | 5 |
| 6. Explain the working of 1 st quadrant chopper. | | 5 |
| 7. Sketch the block diagram for speed control of single phase Induction Motor. | | 5 |
| 8. Explain the working of Light Dimmer circuit using DIAC and TRIAC. | | 5 |
| 9. Explain the Block diagram of over all PLC system. | | 5 |

PART – B

10. (a) Distinguish between SCR and TRIAC. 5
(b) Explain the importance of Free wheeling diode. 5
11. Sketch and explain the Full wave Bridge controlled rectifier with waveforms. 10
12. Explain RC-triggering method to turn ON SCR with circuit diagram. 10
13. (a) Explain the working of series inverter. 5
(b) Explain the working of DC-link inverter. 5
14. Sketch and explain single phase to single phase mid-point cycloconverter. 10
15. (a) Explain Burglar alarm circuit. 5
(b) Explain Armature voltage control of speed control & DC motor. 5
16. Draw the ladder diagram for 10
(a) AND Gate
(b) EX – OR gate
(c) $Y = (A \text{ and } B) \text{ or } C$
(d) NOR Gate
17. (a) Write the block diagram of PID module. 5
(b) Describe general characteristics of PLC registers. 5
18. (a) Compare PLC with SCADA. 5
(b) List the application of SCADA. 5
19. (a) Write the block diagram of Fourth Generation SCADA architecture. 5
(b) Write the block diagram of hierarchical architecture of DCS. 5