C16-**EE-504**

6636

BOARD DIPLOMA EXAMINATIONS

OCT/NOV-2019

DEEE- FIFTH SEMESTER

POWER ELECTRONICS & PLC

Time: 3 hours Max. Marks: 80

PART – A **3 X 10 = 30**

Instructions: *1. Answer **all** questions.*
*2. Each question carries **Three** Marks.*
3. Answer should be brief and straight to the point and should not exceed five simple sentences.

1. State the need of commutation in SCR.
2. State any six rating of SCR.
3. Classify the converters.
4. Define an inverter and state any four applications.
5. State any six applications of Cyclo - Convertors.
6. List any three devices used to suppress spikes in supply system.
7. State the factors affecting the speed of DC motor.
8. Define automation and state its any two advantages.
9. Draw the ladder diagram for logic NAND gate.
10. State any three advantages of PLC.

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PART – B 5 X 10 = 50

***Instructions**:* 1. *Answer any **Five** questions*
2. *Each question carries **TEN** Marks.*
3. *Answer should be comprehensive and criteria for valuation are the content but not the length of the answer.*

11. (a) Explain the working of SCR in forward and Reverse bias modes.
    (b) List any five applications of SCR.
12. (a) Explain auxiliary commutation of SCR with the help of Circuit diagram.
    (b) Draw the V – I characteristics of TRIAC.
13. Explain the working of single phase fully controlled Converter under resistive load with neat wave forms.
14. (a) Explain briefly the control methods of chopper.
    (b) Explain the basic operating principle of Cyclo converter.
15. (a) Explain the operation of light dimmer circuit using DIAC & TRIAC with neat sketch.
    (b) Explain the operation of Burglar Alarm Circuit using SCR With neat sketch.
16. (a) Explain the closed loop system of Water level controller.
    (b) State any five advantages of automation.
17. (a) Compare open loop and closed loop control systems in five Aspects.
    (b) Explain the ON delay timer (Ton) instruction.
18. Draw and explain the ladder diagram of DOL starter.