



C23-EE-404

23438

BOARD DIPLOMA EXAMINATION, (C-23)
OCTOBER/NOVEMBER—2025
DEEE – FOURTH SEMESTER EXAMINATION
POWER ELECTRONICS AND PLC

Time : 3 Hours]

[Total Marks : 80

PART—A

3×10=30

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. Compare GTO SCR and SCR in any three aspects.
2. State the need of commutation of SCR.
3. List any three applications of MOSFET.
4. Compare AC voltage regulator with transformer in any three aspects.
5. State any three disadvantages of half-wave controlled rectifier.
6. List any three applications of inverters.
7. List the devices used to suppress spikes in supply system.
8. What is the purpose of DC filter in UPS?
9. List the timer instructions.
10. Draw the ladder diagram and truth table of logic AND gate.

PART—B

10×5=50

- Instructions :** (1) Answer *any five* questions.
(2) Each question carries **ten** marks.
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. Explain construction and working of SCR with neat sketches.
12. Explain working and V-I characteristics of DIAC with the help of neat diagrams.
13. Explain V-I characteristics and transfer characteristics of MOSFET with neat sketches.
14. Explain working of single-phase full wave fully controlled bridge rectifier with R load with neat sketches.
15. Explain working of single-phase bridge inverter with neat sketches.
16. Explain the speed control of three-phase induction motor using converter and inverter (V/f control method).
17. Explain working of battery charging system using SCR with a neat diagram.
18. Explain the ladder diagram of temperature control with a neat diagram.

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