



C14-EE-604

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BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL—2018
DEEE—SIXTH SEMESTER EXAMINATION
POWER ELECTRONICS

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. Draw the symbols for the following :
 - (a) TRIAC
 - (b) SUS
 - (c) IGBT
2. State the advantages of GTOSCR over SCR.
3. State the necessity of commutation in SCR.
4. State the need of free wheeling diode in converters.
5. State any three applications of choppers.

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6. Classify inverters based on (a) type of output voltage and (b) nature of driving source.
7. State the basic principle of cycloconverter.
8. State the factors affecting the speed of DC motors.
9. List any six advantages of chopper controlled DC motor.
10. List any three applications of power electronic circuits.

PART—B

10×5=50

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

11. Explain the construction and operational characteristics of SCR with neat sketches. 10
12. Draw and explain TRIAC firing circuit using DIAC with waveforms. 10
13. Write short notes on the following : 10
 - (a) Power BJT
 - (b) LASCR
14. Draw and explain the working of 3-phase half-wave controlled converter (R load) with neat sketches. 10
15. Define chopper. Explain the working principle of chopper with waveforms. 10
16. Draw and explain the operation of parallel inverter with waveforms. 10

- 17.** Draw and explain the speed control of 3-phase induction motor by using AC voltage controller. 10
- 18.** (a) What is meant by UPS? Classify UPS. 3
- (b) Explain the working of online UPS with block diagram and state any two applications of it. 5+2=7

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