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C-14-EE-604

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**BOARD DIPLOMA EXAMINATION, (C-14)
OCTOBER/NOVEMBER-2018
DEEE – SIXTH SEMESTER EXAMINATION**

POWER ELECTRONICS

Time : 3 Hours]

[Total Marks: 80

PART-A

3X10=30

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

1. Draw the symbols of the following devices:

(a) GTOSCR, (b) SUS, (c) Shockley diode

2. Define the following terms:

(a) Holding Current (b) Latching current (c) Turn – on time

3. Explain the necessity of commutation in SCR circuits.

4. State the need for freewheeling diode.

5. Write any three applications of chopper.

6. Classify the inverters based on types of commutation.

7. List the types of cyclo-converters.

8. What are the factors that affect the speed of an induction motor?

9. Write any three advantages of thyristor control drives.

10. List the types of disturbances that occur in commercial power supply system.

PART-B

10X5=50

Instructions :

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

11. (a) Explain the constructional features of SCR.
(b) Draw and explain the V-I characteristics of SCR.
12. Explain the working of a TRIAC with neat sketches.
13. (a) Draw and explain the over voltage protection circuit using thyristor.
(b) Explain class-B commutation of a thyristor with neat circuit.
14. Explain the operation of a single phase, half – wave controlled converter using R-L load.
15. Classify choppers. Explain the operation of a chopper in all four quadrants
16. (a) What is an Inverter? Mention any four application of inverter.
(b) Define a cyclo-converter. Write any four application of Cyclo-converter.
17. Explain the speed control of an induction motor by using V/f method, using converter and inverter.
18. Explain the operation of a Burglar Alaram Circuit using SCR with neat sketch.
