C14-EE-**604**

4744

BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL-2019
DEEE - SXITH SEMESTER EXAMINATION

POWER ELECTRONICS

Time:3 Hours Max.Marks:80

PART-A

10x3=30M

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

1) State the need of commutation in SCR.

2) Define Turn on time and Turn off time in SCR.

3) Draw the circuit symbols of IGBT, Power BJT and MCT.

4) State the classification of converters based on the number of pulses and volt-ampere characteristics.

5) State the advantages of free wheeling diode.

6) State the classification of inverters based on the type of connection and type of output voltage.

7) List out any three applications of cycloconverters.

8) State the factors affecting the speed control of Induction motors.

9) What are the disadvantages with speed control of Induction Motor by using voltage-frequency (V/f) control?

10) State any three types of disturbances in commercial power supplies.

PART-B

5x10=50M

Instructions: 1) Answer any **Five** questions. Each question carries **Ten** marks.

2) Answer should be comprehensive and the criteria for valuation is the content but not the length of the answer.

11) Explain the working and V-I characteristics of SCR with neat sketch.

12) Explain the triggering modes of TRIAC with the help of neat diagrams.

13) a) State any five applications of SCR. 5M

b) Explain working of SCR circuit triggered by UJT. 5M

14) Explain the working of single phase fully controlled converter using RL load with neat wave forms.

15) Explain the operation of chopper in all four quadrants.

16) Explain the working of single-phase centre tapped cyclo-converter with neat circuit diagram.

17) Explain speed control of Induction Motor by using AC voltage regulator.

18) (a) Explain the light Dimmer circuit using DIAC/TRIAC with the help of neat sketch. 5M

(b) Explain the working of emergency lamp circuit using SCR. 5M

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