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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.

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PART-B

5x10=50M

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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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