

4744**BOARD DIPLOMA EXAMINATION, (C-14)****JUNE-2019****DEEE – SIXTH SEMESTER EXAMINATION****POWER ELECTRONICS**

Time: 3 Hours]

[Max. Marks : 80

PART-A**10x3=30M**

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

- 1) Define Latching current and Holding current of SCR.
- 2) Draw the circuit symbols for SCR, DIAC and GTO SCR.
- 3) Compare SBS and LASCR in any three aspects.
- 4) List any three applications of converters.
- 5) Define AC voltage regulator and give the classification of AC Voltage regulators?
- 6) State any three applications of Inverters.
- 7) Define Cycloconverter and state its applications.
- 8) State the factors affecting the speed control of a DC motor.
- 9) State any 3 disadvantages with speed control of Induction Motor by using voltage- frequency (V/f) control.
- 10) State any three applications of power electronic circuits.

PART-B

5x10=50M

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

- 11) Explain the constructional details and V-I characteristics of TRIAC with help of neat diagrams.
- 12) Explain the operation of SCR under forward and Reverse bias with the help of neat sketches.
- 13) (a) Explain Gate characteristics of SCR with a diagram.
(b) Compare the characteristics of GTO SCR and SCR.
- 14) Explain the working of single phase half wave controlled rectifier using RL load with wave forms.
- 15) Explain operation of Chopper in all four quadrants with the help of diagrams.
- 16) Explain the working of series inverter with help of circuit diagram and wave forms.
- 17) Explain speed control of Induction motor by using voltage- frequency (V/f) control.
- 18) (a) Explain the working of light dimmer circuit using DIAC and Triac with the help of neat sketch.
(b) State any five types of disturbances in commercial power supply.

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