Reg. No. :

Question Paper Code: 35053

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Fifth Semester

Electronics and Instrumentation Engineering

01UEI503 – INDUSTRIAL ELECTRONICS

(Regulation 2013)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. Define power diode.

2. Draw the two transistor model of SCR.

3. Define Phase Control.

4. Define firing angle.

5. Define duty cycle.

6. Classify the inverter circuit based on commutation circuitry.

7. Mention some of the applications of electrical drives.

8. Write the expression for average output voltage of full converter fed DC drives.

9. What is a digital timer?

10. What type of UPS is preferred for sensitive loads?

PART - B (5 x 16 = 80 Marks)

11. (a) Discuss the construction and VI characteristics of IGBT. (16)

Or

(b) Describe the basic structure of MCT. Give its equivalent circuit and explain the turn on and turn off processes. (16)

12. (a) Discuss the operation of 3 phase full bridge rectifier with R Load. Compare its quadrant of operation with R and RL load. (16)

Or

(b) Explain the principle of operation of 1Φ cyclo converter with necessary circuit and waveforms. (16)

13. (a) Explain the operation of sinusoidal PWM technique. (16)

Or

(b) Summarize the types of chopper classification in detail. (16)

14. (a) Design a stator voltage controller for induction motor application. (16)

Or

(b) With a neat diagram explain the operation of self-controlled synchronous motor. (16)

15. (a) Describe about switched mode power supply. (16)

Or

(b) Analyze the operation of online and offline UPS with neat sketch. (16)

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