Reg. No. :

Question Paper Code: 35503

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

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. Draw the symbol of N-channel E-MOSFET and P-Channel E- MOSFET.

2. Draw the two transistor model of SCR.

3. Define Phase Control.

4. List the advantages of dual converter?

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. Define line regulation and load regulation in voltage regulators.

PART - B (5 x 16 = 80 Marks)

11. (a) Discuss the construction and working principle of SCR. (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) Explain in detail about closed loop control of separately excited DC motor drive. (16)

Or

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

15. (a) Explain in detail about the operation and types of switching mode power supplies with a neat block diagram. (16)

Or

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

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