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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ECE/ETE) (E-I 2011 Onwards) (Sem.–6)

INDUSTRIAL ELECTRONICS

Subject Code : BTEC-903

M.Code : 71232

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. Answer briefly :

a) List various Chopper commutation methods.

b) What is form factor in case of half wave rectifier?

c) What is intrinsic standoff ratio? Also, give its range.

d) What is significance of duty cycle in case of choppers?

e) Differentiate voltage and current driven inverters.

f) Give applications of cycloconverter.

g) How can an UJT used for triggering of an SCR?

h) How firing angle effects the output voltage of converter?

i) What is commutator-less dc motor control?

j) How Power MOSFET differs from simple MOSFET?

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SECTION-B

2. What do you mean by closed loop control? How can it be used in speed control of motors?

3. Explain the two-transistor model of thyristor with suitable diagram.

4. Draw and explain the circuit of a parallel inverter.

5. What is the need of series and parallel connection of SCR? Explain the series connections of SCRs.

6. Discuss **any three** harmonic reduction techniques in PWM.

SECTION-C

7. Explain **any four** techniques to turn-on the thyristor.

8. Explain the circuit of a single-phase full wave converter with RL load and with freewheeling diode. Draw the waveforms at the output and across the diodes.

9. What do you mean by AC voltage controller? Explain sequence control of AC voltage in case of single phase voltage controller.

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NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

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