Reg. No. : | | | | | | | | | | |

Question Paper Code: 31564

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2016

Fifth Semester

Instrumentation and Control Engineering

01UIC504 – POWER ELECTRONICS AND APPLICATIONS

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Draw Snubber circuit for SCR dv/dt protection.
2. Draw turn-on and turn-off characteristics of TRIAC.
3. What is UPS?
4. What is the effect of source inductance in phase controlled converters?
5. Define Time ratio control of DC to DC converter.
6. Define current limit control of DC to DC converter.
7. What is induction heating?
8. Define space vector modulation.
9. State the principle of phase control for AC to AC converter.
10. What is integral cycle control for AC to AC converter?

PART - B (5 x 16 = 80 Marks)

11. (a) Summarize turn-on and turn-off characteristics of SCR. (16)

Or

(b) With neat sketch explain the switching characteristics of IGBT. (16)

12. (a) With diagram explain working of single phase fully controlled bridge rectifier with resistive load. (16)

Or

(b) With neat diagram explain working of 6-pulse converter. (16)

13. (a) Explain with neat diagram working of Buck-Boost converter. (16)

Or

(b) Describe principle of operation of L type ZCS resonant converter. (16)

14. (a) With neat diagram describe 180 mode of operation of single phase converter. (16)

Or

(b) Describe working of current source inverter. (16)

15. (a) Explain working of single phase cyclo converter. (16)

Or

(b) Describe two-stage sequence control for single phase AC voltage controller. (16)

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