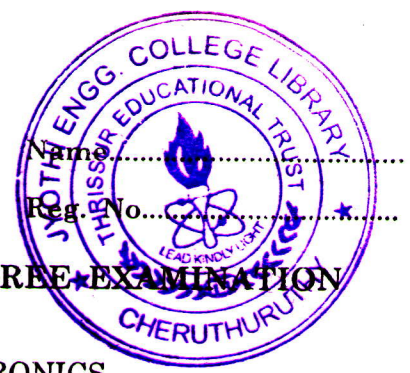
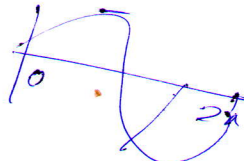


C 47569



SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION
JUNE 2008

EE 2K 602/PTEE 2K 502—POWER ELECTRONICS

Time : Three Hours

Maximum : 100 Marks

- I. (a) Describe the switching characteristics of Power MOSFET.
(b) Write short notes on turn on methods of thyristor.
(c) How the delay angle of one converter related to the delay angle of the other converter in dual converter system ?
(d) What is the principle of operation of an inverter ?
(e) What is the principle of step-up dc-dc converters ?
(f) Mention the advantages and disadvantages of on-off control and phase control.
(g) List the various types of SMPS ? Describe SMPS with push pull configuration.
(h) Compare the linear power supply and UPS.
- (8 × 5 = 40 marks)
- II. (a) Explain the switching characteristics of IGBT with neat sketch. (15 marks)
- Or
- (b) Describe the following :—
(i) UJT Firing Circuit. (8 marks)
(ii) Reverse recovery characteristics of power diode. (7 marks)
- III. (a) Explain with sketch the operation of full 1ϕ bridge controlled rectifier with RL load and derive the Average load voltage and RMS load voltage. (15 marks)
- Or
- (b) Explain the operation of parallel bridge inverter and derive the necessary equations. (15 marks)
- IV. (a) Explain with neat sketch the operation of two-stage sequence control of AC voltage controllers. (15 marks)
- Or
- (b) Draw and explain the slip torque characteristics of cycloconverter fed induction motor control and derive the necessary equations. (15 marks)
- V. (a) Describe the flyback SMPS with relevant equivalent circuits and waveforms. Derive the various expressions for voltages and currents involved. (15 marks)
- Or
- (b) Explain with suitable diagram, the operation of offline UPS system. (15 marks)
- [4 × 15 = 60 marks]