

41239

Name : .....

Reg. No. ....



**SIXTH SEMESTER B.TECH (ENGINEERING) DEGREE EXAMINATION**  
**EC/PTEC 09 L01 POWER ELECTRONICS**

**Time : Three Hours**

**Maximum Marks 100**

**PART A**

*Answer all questions*

1. Compare BJT and MOSFET.
2. What is Pulse Width Modulation? How it is used in Inverters?
3. What is a regulator?
4. What is a Chopper?
5. What is an UPS?

(5 x 2 = 10 Marks)

**PART B**

*Answer any four questions*

6. Give the device specifications and ratings of a Thyristor.
7. Explain briefly about TRIAC.
8. Explain the operation of a Bridge Inverter.
9. What are Cycloconverters? Explain.
10. Compare Switched Mode Power Supply with linear power supply.
11. Give the basic structure of a BJT and its V-I characteristics.

(4 x 5 = 20 Marks)

**PART C**

*Answer all questions*

12. (a) Explain the basic structure, V-I characteristics and types of power diodes.  
(Or)  
(b) (i) Explain the operation of a IGBT.  
(ii) Explain the applications of UJT in turning on and turning off the gate triggering circuit.
13. (a) With schematic explain the operation of a Single Phase SCR rectifier with R and RL loads.  
(Or)  
(b) Explain the various types of single phase SCR inverters.
14. (a) Explain the operation of an Single phase AC regulator with R and RL loads.  
(Or)  
(b) (i) Explain the principle of operation of a Step up and Step down chopper.  
(ii) Explain the speed control in Induction Motors.
15. (a) Explain the operation of (i) Buck (ii) Boost and (iii) Buck-Boost regulators.  
(Or)  
(b) Explain the circuit operation, characteristics and applications of any one configuration of UPS.

(4 x 10 = 40 Marks)

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