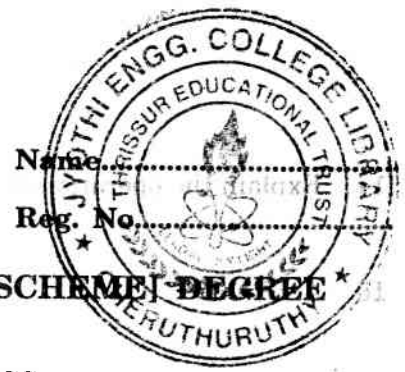


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**SIXTH SEMESTER B.TECH. (ENGINEERING) [09 SCHEME] DEGREE
EXAMINATION, APRIL 2016**

EC/PTEC 09 L01—POWER ELECTRONICS

Time : Three Hours

Maximum : 70 Marks

Part A

Answer all questions.

Each question carries 2 marks.

1. Why lateral current flow in the base is the limiting factor in BJT performances ?
2. What are the merits of single-phase rectifier with RL load ?
3. What is the function of cycloconverter ?
4. Where buck regulators are used ?
5. Give the specification and rating of IGBT.

(5 × 2 = 10 marks)

Part B

Answer any four questions.

Each question carries 5 marks.

6. Explain the operation of triggering circuit used in UJT.
7. Explain the principle of operation of phase controlled rectifiers.
8. Explain the working of a chopper.
9. Differentiate between buck and boost switching regulator.
10. Draw and explain the V-I characteristics of power diode.
11. Explain the features of uninterruptable power supply.

(4 × 5 = 20 marks)

Part C

Answer all questions.

Each question carries 10 marks.

12. Describe the construction, operation and characteristics of Thyristor.

Or

13. (a) Draw the structure of MOSFET and explain its characteristics. (6 marks)
- (b) Explain the working of TRIAC. (4 marks)

Turn over

14. Explain the operation of pulse width modulated inverter with suitable figures.

Or

15. Analyse the performance of half controlled and fully controlled converters.

16. Describe the working of single-phase a.c. regulator with RL load.

Or

17. (a) Discuss the mechanism of speed control of DC motors.

(6 marks)

(b) Write a note on single-phase cycloconverter.

(4 marks)

18. Describe the operation of buck-boost regulator.

Or

19. Discuss the working of uninterruptable power supply.

(4 × 10 = 40 marks)