

AUGUST 2007

2007 MAHATMA GANDI UNIVERSITY
I B.TECH DEGREE EXAMINATIONS
VIII SEMESTER ELECTRICAL AND ELECTRONICS ENGINEERING
ADVANCED POWER ELECTRONICS SYSTEM (ELECTIVE II)

TIME : 3 HOUR
MARK : 100

ANSWER ALL QUESTIONS

EACH QUESTION CARRIES 4 MARKS. (10 X 4 = 40 MARKS)

1. Explain the output voltage equation.
2. Briefly explain C'uk Converter.
3. Explain linear mode power supply.
4. Explain isolated DC topologies.
5. Explain series and parallel resonant converters.
6. Briefly explain half bridge operation in resonant converters.
7. Distinguish between bipolar PWM and unipolar PWM.
8. Discuss the disadvantages of SPWM inverter.
9. Define and explain displacement factor
10. Write short note on boost rectifiers.

EACH QUESTION CARRIES 12 MARKS. (5 X 12 = 60 MARKS)

11. Briefly explain DC-DC converter topologies.
Or
12. Explain full bridge with bipolar and unipolar switching.
13. Explain the principle of operation of SMPS with a neat block diagram.
Or
14. Briefly explain push-pull topology.
15. Discuss the principles of zero voltage and zero current switching. (ZVS and ZCS).
Or
16. Discuss the advantages of resonant converters over PWM converters.
17. Discuss the principle of sinusoidal PWM. Define modular index.
Or
18. Describe with block diagram tolerance band control and fixed frequency control.
19. Explain different topologies of UPS.
Or
20. Explain with block schematic electronic ballast.