Roll No .....

EX - 8301

B.E. VIII Semester

Examination, June 2014

Advanced Power Electronics

(Elective-III)

Time : Three Hours

Maximum Marks : 70

Note: Attempt any five questions one question from each unit. All questions carry equal marks.

UNIT – I

1. a) Explain the advantages and disadvantages of switched mode power supply with the help of block diagram. Explain the working principle of switched mode power supply.
   b) Why we use control circuit in power electronics supplies? Explain "current mode control" with appropriate diagrams and waveforms.

OR

2. a) What is the difference between Linear and switched mode converters give one example of each converter?
   b) Explain the Resonant mode operations of power supplies.

UNIT – II

3. a) Explain the working principle of Buck Boost Converter with appropriate waveform of circuit diagram.
   b) Explain the working principle of flyback isolated converter with appropriate waveform of circuit diagram.

OR

4. a) What do you understand by state - space model? Explain?
   b) Explain full bridge topology of isolated converter.

UNIT – III

5. a) Explain three phase current sourced PWM CSI, with proper diagram & waveforms.
   b) Explain 3 phase 180° mode VSI with appropriate wave form and circuit diagram.

OR

6. a) List the commonly used PWM techniques for voltage control of inverters and explain any one of them.
   b) Explain the space vector modulation for 3phase bridge inverter.

UNIT – IV

7. a) What is AC chopper. Design a AC chopper and compare it with conventional AC controller with the appropriate waveform and diagrams.
   b) How do you control the harmonics of AC chopper? Explain any one method of controlling the harmonics.

OR

8. How do you control the harmonics of AC chopper using symmetrical and asymmetrical wave form pattern?

UNIT – V

9. a) Explain the Zero Current Switching (ZCS) topology with appropriate waveform and circuit diagram.
   b) Explain the Zero Voltage Transition (ZVT) DC, DC converter.

OR

10. a) What do you understand by generalized switching cell give same examples?
    b) Explain Zero Voltage Switching (ZVS) topology with appropriate waveform of diagram.

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