

Roll No.....

EX-8301 (GS)

B.E. VIII Semester

Examination, November 2019

Grading System (GS)

Advanced Power Electronics

(Elective - III)

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Discuss the working of an isolated flyback regulator and derive the expression for RMS value of primary current.
b) Explain the working of buck-boost converters.
2. a) What is switch mode Power Supply? How is it differ from conventional power supply?
b) Draw and explain resonant mode operation of power supplies.
3. Describe SMPS using half bridge and full bridge configurations. What are the advantages and disadvantages of SMPS?
4. What is the general arrangement of UPS systems? Explain different configurations of UPS working.
5. Explain the steady state modeling of a AC chopper. Describe its phase diagram.

6. Giving circuit diagram and showing waveforms, explain working of fly-back converter type switch mode dc power supply.
7. Explain the principle of ZVS converter. Describe a ZVS resonant converter with appropriate circuit and waveform.
8. A three phase bidirectional and connected controller has resistive load of 10Ω . The supply is 200V 50Hz. The delay angle is $2\pi/3$. Determine :
 - i) Output voltage
 - ii) Expression for Instantaneous line currents
 - iii) Current in each phase
 - iv) Input PF
 - v) Current through each thyristor
