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Answer any FIVE Questions All Questions carry equal marks

1. (a) Explain about Residual drift in D.C amplifiers.  
(b) Explain how it can be compensated.
2. (a) Tabulate the differences between linear mode power supply and SMPS.  
(b) Explain the different types of SMPS.  
(c) What is a switching regulator? Why it is called so? Enumerate and explain its advantages.
3. (a) Draw the basic electronic voltage stabilizer circuit and explain it.  
(b) Define the terms regulation factor and stabilization ratio of a voltage regulator.
4. (a) Explain the thermal and power ratings of SCR.  
(b) Explain the methods of measurement of the following SCR parameters.
  - i. Holding and latching current
  - ii. Turn-off time
  - iii.  $dV/dt$  and  $di/dt$
5. Explain the operation of three-phase , half-wave controlled converter with resistive load. Sketch the associated waveforms and derive expressions for the average voltage output.
6. Draw and explain the operation of the time-sharing inverter circuit and give its related current and voltage waveforms.
7. Draw and explain the operation of a speed control of a dc series motor by a singlephase semiconverter for the continuous motor current. Draw the associated voltage and current waveforms.
8. (a) Explain the coagulating action of Ultrasonics.  
(b) Explain the chemical ,thermal and biological effects of Ultrasonics.

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