Code No: NR411303 **NR**

IV B.Tech I Semester Supplementary Examinations, November 2005
INDUSTRIAL ELECTRONICS
(Electronics & Control Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Draw a two stage (identical) direct coupled amplifier and explain its principle of operation.
   (b) What is drift? Explain. [10+6]

2. (a) Explain in detail the principle of obtaining a regulated power supply.
   (b) What is a controlled series voltage regulator? Give its block diagram.
   (c) Tabulate the differences between
      i. Shunt and series regulators.
      ii. Zener shunt regulator and transistorized shunt regulator. [5+5+6]

3. An LM 217 IC voltage regulator, is to produce an output of 8V with IL(max) = 100mA. Calculate the suitable resistances for the ouput and select an appropriate supply voltage and also determine the device power dissipation. [16]

4. (a) List the major applications of thyristors ?
   (b) Explain the theory and operation of SCR using suitable figures.
   (c) Draw the load-voltage waveforms for thyristor circuit with dc input. [5+5+6]

5. Describe the operation of a single phase, two-pulse, mid-point converter with relevant voltage and current waveforms. Discuss how each SCR is subjected to a reverse voltage equal to double the supply voltage in case turns ratio from primary to each secondary is unity. [16]

6. Design a snubber circuit and explain its operation and give its applications. [16]

7. (a) Explain the principle and operation of SCR alarm circuit.
   (b) Explain the speed control of induction motor using triac. [8+8]

8. (a) Explain the theory and principle of dielectric heating.
   (b) List various Industrial applications of dielectric heating. [8+8]

⋆ ⋆ ⋆ ⋆ ⋆