

B.Tech. Degree IV Semester Examination, April 2008**ME 402 INDUSTRIAL ELECTRONICS***(2006 Scheme)*

Time: 3 Hours

Maximum Marks: 100

PART A(Answer All questions)

(8 x 5 = 40)

- I
- What is meant by biasing a transistor? What happens if a BJT is not biased properly?
 - Comment about the feedback technique that used in oscillation and amplifiers. Mention any four advantages of negative feedback.
 - Draw the circuit of RC integrator and sketch the output for a square wave input.
 - List any five characteristic parameters of an ideal op-amp. Indicate their values.
 - Explain the working of BJT as a switch.
 - What are multivibrators? Mention the classifications and major application of multivibrators.
 - Draw VI characteristics of SCR. Give one application of SCR.
 - Briefly explain the principle of dielectric heating.

PART B

- II
- Draw the circuit of an RC coupled amplifier and give the functions of each components. (10)
 - Sketch the frequency response of RC coupled amplifier. (5)
- OR**
- III
- Explain the classification of power amplifiers. Compare Class A, Class B and Class C amplifiers. (10)
 - Give h - parameter equivalent of a CE amplifier. (5)
- IV
- Draw a clipping circuit that clips a sine wave with (20V_{pp}) at +6V and -3V at positive and negative half cycles respectively. Also sketch the wave form. (9)
 - Define and explain CMRR. Give its practical value. (6)
- OR**
- V
- Explain the application of op-amp as (i) Summer and (ii) Integrator in inverting configuration. (10)
 - Draw and explain a positive clamper circuit. (5)
- VI
- Compare oscillators and amplifiers. (4)
 - Draw the circuit of RC phase shift oscillator and explain it showing the frequency of oscillation. (11)
- OR**
- VII
- Draw the circuit of astable multivibrators and explain with relevant waveforms. (12)
 - What are Barkhausen's criteria for sustained oscillations? (3)
- VIII
- Explain a fully controlled rectifier showing relevant waveforms. (9)
 - Explain the working of series voltage regulator. (6)
- OR**
- IX
- Draw the block diagram of SMPS and explain the function of each block. (10)
 - Discuss the application of power electronics in welding. (5)

