ROLLNO RR421003

2006 JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

IV B.TECH II SEMESTER REGULAR EXAMINATIONS
INDUSTRIAL ELECTRONICS
(ELECTRONICS & INSTRUMENTATION ENGINEERING)

APRI/MAY 2006

TIME : 3HOUR
MARK :100

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) Explain the methods of decreasing input regulation factor (Sv) for a series Voltage Regulator.

(b) Define

i. input regulation factor

ii. output resistance

iii. temperature coefficient of a Voltage Regulator. And derive an expression to relate them.

3. (a) Draw the circuit of monolithic regulator connected as a current regulator and explain it. Also obtain the expression for its load current.

(b) Differentiate between the monolithic and hybrid integrated circuits.

4. (a) List the advantages of thyristor as compared to BJT for switching applications.

(b) An SCR has a V
g -I
g characteristics given as V
g = 1.5 + 8 I
g . In a certain
application, the gate voltage consists of rectangular pulses of 12 V and of duration 50microsec with the duty cycle 0.2. Find the value of Rg series resistor in gate circuit to limit the peak power dissipation in the gate to 5 watts. And also calculate average power dissipation in the gate.

(c) Define the Nonrepetitive and Repetitive peak reverse and forward voltage ratings of SCR.

5. Explain the operation of a single-phase , half-controlled bridge converter with resistive load with the associated waveforms and also derive the expressions for average load voltage , average load current and RMS load voltage.

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

7. Explain the SCR sequential flasher used for automobile turn signals.

8. (a) Explain the coagulating action of Ultrasonics.

(b) Explain the chemical ,thermal and biological effects of Ultrasonics.

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