

Code: R7310403

III B. Tech I Semester (R07) Supplementary Examinations, May 2012

LINEAR IC APPLICATIONS

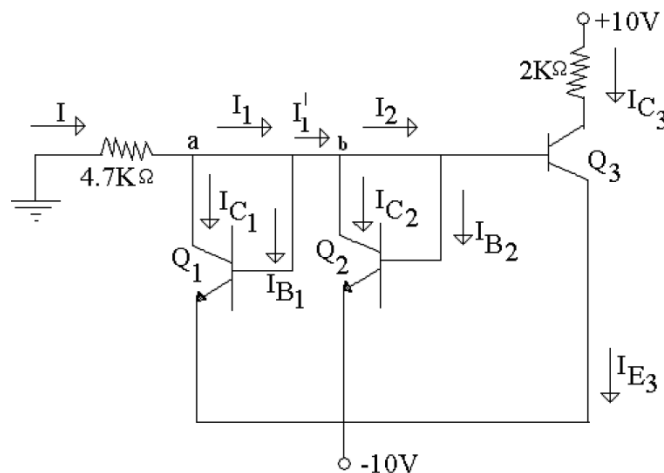
(Electronics & Communication Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Determine the emitter current in transistor Q_3 of figure. If $V_{BE} = 0.7V$ and $\beta = 100$.



- (b) Discuss the differences between the differential amplifiers used in the first two stages of op - amp.
- 2 (a) Explain the procedure for measuring offset voltage and bias currents of general purpose Op-Amp.
(b) With neat block diagram explain the function of various building blocks of an OP-AMP.
- 3 (a) Draw a neat circuit of an integrator circuit. Explain the functioning with the input - output wave forms.
(b) Derive the output voltage V_o of an integrator circuit.
- 4 (a) What is zero crossing detector? Explain the operation with neat circuit diagram.
(b) What is the difference between Sawtooth wave and triangular wave? Explain the operation of triangular wave generation circuit with neat diagram.
- 5 Derive the frequency of oscillation of a RC phase shift oscillator and explain the operation of the circuit.
- 6 Discuss, with relevant circuits and waveforms, the working of monostable multivibrator using 555 timers.
- 7 (a) Explain the operation of a successive approximation type analog to digital converter.
(b) Calculate the no. of bits required to represent a full scale voltage of 10 V with a resolution of 5 mV approximately.
- 8 (a) Explain the basic multiplier and its characteristics.
(b) Explain the performance parameters of multiplier.
