

Code: R7310403

R7

B.Tech III Year I Semester (R07) Supplementary Examinations, May 2013

LINEAR IC APPLICATIONS

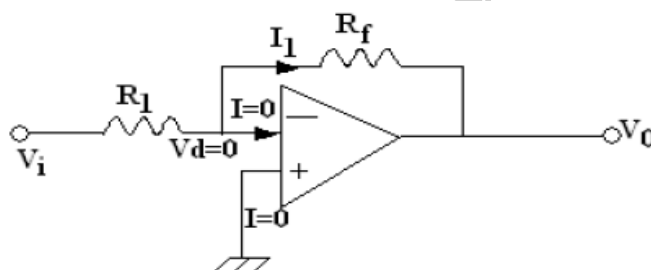
(Electronics and Communication Engineering)

Time: 3 hours

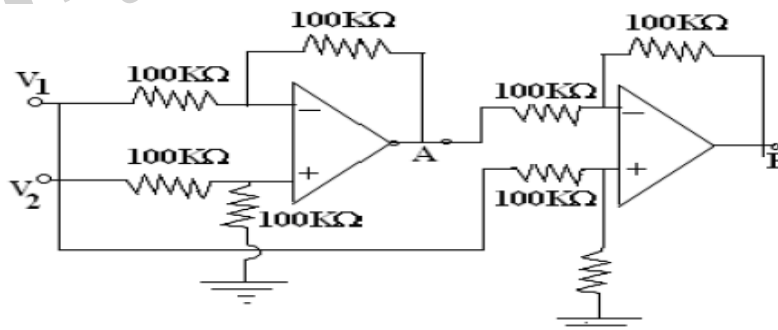
Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Draw the schematic of emitter coupled differential amplifier, explain the operation.
(b) What is level translator? What is the necessity of level translator stage in cascading of differential amplifiers?
- 2 (a) Calculate the exact closed loop gain of inverting amplifier shown in figure if $AOL = 200\text{ K}\Omega$, $R_i = 2\text{ M}\Omega$ and $R_o = 75\text{ }\Omega$.



- (b) What are the three differential amplifier configurations? Compare and contrast these configurations.
- 3 (a) What is the voltage at point A and B for the circuit shown in figure below if $V_1 = 5\text{ V}$ and $V_2 = 5.1\text{ V}$?



- (b) Draw the circuit of non-inverting amplifier and derive the expression for output voltage.
- 4 (a) Distinguish between astable, bistable and monostable multivibrators.
(b) With the help of a neat circuit diagram explain the working of a logarithmic amplifier.

Contd. in Page 2

Code: R7310403

R7

- 5 (a) With suitable circuit diagram explain the operation of an RC phase shift oscillator.
(b) It is possible to obtain any shaped waveform as output for a basic oscillator.
- 6 (a) Configure a 555 timer as a Schmitt trigger and explain.
(b) Explain frequency translation and FSK demodulation using 565PLL.
- 7 (a) With a neat circuit diagram explain the functioning of an inverted R-2R ladder type digital to analog converter.
(b) The LSB of a 10-bit DAC is 20 m volts.
 - (i) What is its percentage resolution?
 - (ii) What is its full-scale range?
 - (iii) What is the output voltage for an input, 10110 01101?
- 8 (a) What are the basic blocks of analog multiplexer? Explain how the data selection process is performed in it.
(b) Draw a sample and hold circuit and explain its operation with necessary input and output waveforms and indicate its uses.
