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
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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 KΩ, R_i = 2 MΩ and R_0 = 75 Ω.
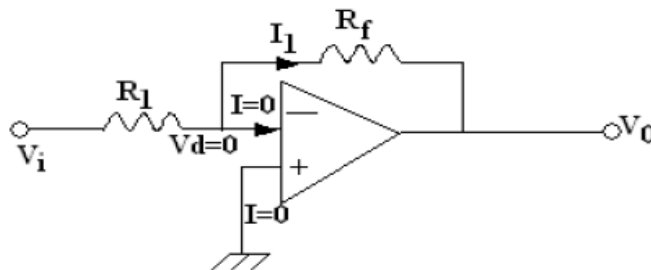
   (b) What are the three differential amplifier configurations? Compare and contrast these configurations.

3 (a) What is the voltage at point A and B for the circuit shown in figure below if V_1 = 5 V and V_2 = 5.1 V?
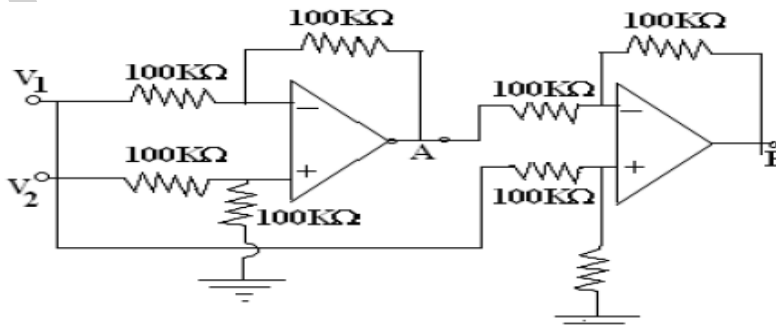
   (b) Draw the circuit of non-inverting amplifier and derive the expression for output voltage.

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.

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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 in performed in it.
  (b) Draw a sample and hold circuit and explain its operation with necessary input and output waveforms and indicate its uses.

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