

FOURTH SEMESTER B.TECH DEGREE EXAMINATION

MODEL QUESTION

(2013 SCHEME)

13.406 LINEAR INTEGRATED CIRCUITS (A)

Time : 3 Hours

Max. Marks :100

PART - A

Answer ALL Questions. Each question carries 2 Marks

1. Draw the circuit of a Non-Inverting zero crossing detector and explain the working of the circuit.
2. With help of a circuit explain the working of a single stage- cascade OP-AMP circuit
3. Establish a relation between open loop and closed loop gain of a non - inverting amplifier.
4. Design an Astable multi vibrator with 10KHz free running frequency and duty cycle of 0.6
5. Design a R-2R ladder type DAC for a resolution of 0.2 V, with 3V reference source.
6. Draw the circuit of second order BPF using switched capacitors.
7. Design a fold back protection circuit for IC 723 with output voltage of 10V and load current(maximum) of 1A, find the maximum load current permitted by the protection circuit when output voltage reaches 4V due to the action of protection circuit.
8. Draw the circuit of a emitter coupled VCO and explain its working.
9. Draw the circuit of a current boosting circuit and explain its working
10. Find the control voltage applied to a VCO, when the VCO is tracking an input frequency of 50.9KHz signal, free running frequency is 50KHz and K_v is 4500Hz/V.


(10 x2=20)

PART - B

Answer ONE question from each module

Module -I

11. Derive the gain, slew rate and output impedance of a two stage folded cascode MOSFET OP-AMP. (20)
12. Draw the circuit of instrumentation amplifier and derive equation for CMRR of a practical instrumentation amplifier. (20)


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