

Roll NO

B.E. / B.Tech. (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV / DEC 2013

BIOMEDICAL ENGINEERING

Fourth Semester

EC9302 - LINEAR INTEGRATED CIRCUITS.

(Regulations :2008)

Duration: 3 Hrs.

Maximum Marks: 100

Answer All Questions

Part A

10 X 2 = 20 Marks.

1. what is a current source?
2. Define slew rate.
3. What is the gain of an op-amp based non inverting amplifier if $R_f = 100K$ and $R_{in} = 10 K$.
4. Draw the schematic of op-amp based triangular wave generator.
5. Draw the circuit diagram for voltage to current conversion using operational amplifier.
6. What is the function of Componder IC?
7. Calculate the values of LSB, MSB and full scale output for an 8-bit DAC for 0 to 5V range.
8. What is the number of comparators required to design an 12 bit Flash ADC.
9. Give the advantage of SMPS over linear voltage regulator.
10. What is the difference between optocoupler and isolation amplifier?

Part B

(5 X 16 = 80 Marks)

- 11.(i). With a neat diagram explain the internals of monolithic IC operational amplifier. (8)
- (ii).With a neat diagram explain widlar current source. (8)

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