MEVD–204(B)

M. E./M. Tech. (Second Semester)
EXAMINATION, Oct., 2009
SYSTEM HARDWARE DESIGN
(Elective – II)
[MEVD – 204(B)]

Time : Three Hours
Maximum Marks : 100
Minimum Pass Marks : 40

Note : Attempt any *five* questions. All questions carry equal marks.

1. (a) Derive the small signal output resistance of a current source and current sink.
   (b) Explain in detail about the general principle of the bandgap reference.
2. With a neat sketch explain CMOS voltage references.
3. Discuss the various methods to obtain current mirrors with supply independent biasing.
4. (a) Draw and explain the circuit of second order switched capacitor low pass filter and derive its transfer function.
   (b) Write explanatory notes on CMOS switched capacitor filters.
5. (a) Explain in detail the types of ASICS.
   (b) Draw the CMOS logic for a two input AND gate and OR gate.
6. Discuss in detail special routing in ASIC design.
7. (a) Compare emitter follower, source follower and push pull output stages.
   (b) Explain the simplified version of an *n*-channel input, folded cascade OP-AMP.
8. (a) Discuss the techniques involved in the design of temperature independent biasing methodologies.
   (b) Explain in detail about the Miller compensation of the two stages OP-AMP.