MEVD-204 B

ME/M.Tech (Second Semester) MEVD EXAMINATION, July/August, 2008

System Hardware Design

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

Note: Attempt any Five Questions. All questions carry equal marks.

Q.1 Give an overview of current CMOS technologies. What are the basics semiconductor processes involved in fabrication of IC's.

Q.2a) What is FET? Discuss its switching characteristics compare these characteristics with those of BJT.
b) What is active resistors. Explain Also give design procedure of such resistors.

Q.3a) What is CMOS. Explain draw circuit diagram of a CMOS-NOR gate and explain its working.
b) Define all characteristic parameters of digital IC's with specific reference to CMOS logic.

Q.4a) What is signal propagation delay? Explain give various delay models.
b) What is capacitive loading? How it can be minimized? Explain.

Q.5a) Explain the working of Stan step-ramp analog to digital converter.
b) Draw a circuits for R-2R ladder resestive network which can be used in a 6 bit D/A convertor. Label all the inputs and outputs. Calculate its percent resolution and the output voltages caused by each bit if the input levels are v(o)=0 and v(i)=5 volts.

Q.6 What are HDL's? Explain their importance and applications in brief.

Q.7a) Discuss IC layout design rules in brief.
b) Give the VLSI design flow chart and explain in brief.

Q.8 Write short notes (any two)
a) A current mirror
b) Switched capacitor filters
c) ASIC design flow
d) Voltage reference
e) CMOS with transmission gates