

Subject Code: H6802/R13

M. Tech –II Semester Regular/ Supply Examinations, October, 2015

CMOS MIXED SIGNAL CIRCUIT DESIGN

(Common to VLSI&ES, ES&VLSI, VLSID&ES, ES& VLSID, VLSI, VLSID, VLSID and VLSI&ME)

Time: 3 Hours

Max Marks: 60

Answer any FIVE questions

All questions carry EQUAL marks

1. (a) Draw the basic circuit of a switched capacitor, its equivalent circuit , explain its operation and derive its equivalent resistor value.
(b) For the above circuit if clock frequency is 100kHz, find the capacitor value that will emulate 1M ohm resistor.
2. (a) What is a Flash converter? Discuss the working of a 3-bit Flash A/D Converter.
(b) Design a 3-bit Flash ADC with quantization error centered about zero LSBs.
3. Explain the non-ideal characteristics of a switched capacitor integrator.
4. (a) Draw the block diagram of a D-A converter in signal processing applications.
(b) Give the classification of a D-A converters.
(c) Explain the static and dynamic characteristics of DAC.
5. Mention all kinds of medium speed and high speed ADC and explain the operation of a multiple- bit pipeline ADC.
6. Explain about deterministic approach and statistic approach of quantization noise in data converters
7. (a) Design a thermometer code charge redistribution D/A converter.
(b) Write about hybrid converters.
8. Distinguish oversampling without noise shaping and with noise shaping.
