

Code: R7310404

R07

## III B. Tech I Semester (R07) Supplementary Examinations, May 2012 DIGITAL IC APPLICATIONS (Electronics & Communication Engineering)

Time: 3 hours

Max Marks: 80

## Answer any FIVE questions All questions carry equal marks

- 1 (a) Explain the effect of floating inputs on CMOS gate.
  - (b) Explain how a CMOS device is destroyed.
  - (c) What is the difference between transmission time and propagation delay? Explain these two parameters with reference to CMOS logic.
- 2 (a) Draw the circuit diagram of basic CMOS gate and explain its operation.
  - (b) What are the typical parts of a TTL data sheet and discuss their importance in circuit design?
- 3 (a) What is the importance of time dimension in VHDL and explain its function?
  - (b) Write a VHDL program to generate a clock with off time and on time equal to 10ns.
- 4 (a) Write a VHDL program for 74×245.
  - (b) Design a 16-bit comparator using 74×85 lcs.
- 5 Write a VHDL program for a 74x181 ALU.
- 6 Write a VHDL code for a 1-bit comparator circuit with the input bits are equal greater than or less than inputs from the previous stage and the outputs contain equal greater than or less than conditions. Using this entity write a VHDL code for a 16-bit comparator using data flow style.
- 7 (a) Distinguish between the synchronous and asynchronous counters.
  - (b) Design a 4 bit binary synchronous counter using 74X74. Write a VHDL code for it using data flow style.
- 8 Design a 4X4 unsigned multiplier using 256X8 ROM.

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