Reg. No. :

Question Paper Code: 37504

B.E. / B.Tech. DEGREE EXAMINATION, AUGUST 2021

Seventh Semester

Electronics and Instrumentation Engineering

01UEI704 - VLSI SYSTEM DESIGN

(Regulation 2013)

Duration: 1:45 hour   Maximum: 50 Marks

PART A - (10 x 2 = 20 Marks)

(Answer any ten of the following questions)

1. What are the second order effects in a MOS transistor?

2. What are the advantages of Twin-tub process?

3. Define short channel devices.

4. Indicate the different symbols used for various regions in stick diagram.

5. What are the advantages of AOI implementation of two level logic functions?

6. List the few applications of Tally circuits.

7. What are the advantages of PLA?

8. Mention some of PLDs.

9. List out the operators in VHDL.

10. What are the different design units in VHDL?

11. Compare enhancement and depletion mode devices.

12. What is body effect?

13. What is lambda design rule?

14. Define short channel devices.

15. Draw the CMOS implementation of 4-to-1 MUX using transmission gates.

PART – B (3 x 10= 30 Marks)

(Answer any three of the following questions)

16. Show the various components of nMOS transistor model. (10)

17. Explain the DC characteristics and switching characteristics of a CMOS inverter.
(10)

18. What is Barrel shifter and discuss its SHIFT-1 and SHIEFT-2 operation. (10)

19. Explain the NMOS NAND-NAND PLA realization with a neat stick diagram. (10)

20. Explain a simple test bench for any one Flip-Flop with necessary VHDL code.
(10)

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