Total No. of Questions : 8]

SEAT No. :

P4766

[Total No. of Pages : 2

[5561]-650
B.E. (E & TC)
VLSI Design & Technology
(2015 Pattern)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates :

1) *All questions are compulsory.*
2) *Figures to the right indicate full marks.*

Q1) a) Explain procedure with the help of VHDL code. **[6]**

b) Explain clock skew and methods to minimize the effect of clock skew. **[7]**

c) Explain any four important specifications of FPGA. Also explain CLB's in FPGA. **[7]**

OR

Q2) a) Explain VHDL attributes with example. **[6]**

b) Explain interconnect Routing Techniques. **[7]**

c) Explain in detail architecture of Macrocell in CPLD. **[7]**

Q3) a) Explain the following : **[8]**

i) Body Effect

ii) Hot Electron Effect

b) Derive the expression for static & Dynamic power dissipations. Compare them. **[8]**

OR

Q4) a) Design CMOS logic for $\gamma = ABC + D$. Calculate W/L ratio for NMOS & PMOS area needed on chip. **[8]**

b) Draw & explain CMOS transfer characteristics. **[8]**

P.T.O.

Q5) a) Explain cross talk and drain punch through. **[8]**

b) Explain fabrication method of CMOS using n well process. **[10]**

OR

Q6) a) Explain Design issues like antenna effect and electro migration effcct. **[8]**

b) Draw stick diagram for CMOS inverter, NAND, NOR gate. **[10]**

Q7) a) Explain TAP controller with state diagram. **[8]**

b) Write short note on BIST. **[8]**

OR

Q8) a) Explain JTAG in detail. **[8]**

b) Explain in detail stuck at fault model. **[8]**

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