Total No. of Questions : 8]

SEAT No. :

P3766

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[4960] - 1260

M.E. (E & TC) (VLSI and Embedded Systems)

ASIC Design

(2013 Credit Pattern) (Semester - III)

Time : 3 Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Answer any five questions out of 8.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Use of electronic pocket calculators is allowed.***
5) ***Assume suitable data, if necessary.***

Q1) a) What are different types of ASIC? Explain in brief. **[5]**

b) Draw and explain the flow chart relating to ASIC design flow. **[5]**

Q2) a) What are different types of simulation? Explain in brief. **[4]**

b) Explain different modelling techniques used in VHDL. **[3]**

c) Write a short note on ASIC cell libraries. **[3]**

Q3) a) Write a note on signal integrity effects in ASIC design. **[5]**

b) Write a VHDL code for full adder using structural architecture. Also write test bench for it. **[5]**

Q4) a) Write an explanatory note on practical aspects of mix analog digital design. **[4]**

b) What is boundary scan testing? Explain in brief. **[3]**

c) Define logic synthesis and logic simulation. **[3]**

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Q5) a) What are the factors contributing to best floor planning? Explain in detail. **[3]**

b) What is force directed placement algorithm? Explain different force directed placement algorithms. **[3]**

c) Explain in detail group migration algorithm for system partitioning. **[4]**

Q6) a) List the goals and objectives for system partitioning and routing. **[4]**

b) Define channel density and Eimore's delay. **[2]**

c) Write a short note on Design Rule Check (DRC) and LVS. **[4]**

Q7) a) Explain in detail Automatic Test Vector Generation. **[5]**

b) Write a short note on features of EDA tools. **[3]**

c) Define the terms LFSR and BIST. **[2]**

Q8) a) Write a short note on stack at fault model. **[4]**

b) What is fault simulation? What are different types of fault simulation. **[4]**

c) Explain in detail formal verification. **[2]**