Total No. of Questions : 8]

SEAT No. :

P3762

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[4960] - 1254

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

Reconfigurable Computing

(2013Pattern) (Semester - I)

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 logarithmic tables slide rule, Mollier charts and electronic pocekt calculator and steam tables are allowed.***
5) ***Assume suitable data if necessary.***

Q1) a) State and explain reconfigurable device characteristics. **[4]**

b) Compare FPGA, GPP, ASIC with respect to functional capacity, data density and functional diversity. **[3]**

c) Define configurable, programmable and fixed function devices. **[3]**

Q2) a) With help of suitable example explain difference between reconfigurable machines and conventional processor. **[4]**

b) Discuss various reconfigurable devices developed yet. **[4]**

c) Give issues in Reconfigurable network design. **[2]**

Q3) a) Give detail mathematical analysis of interconnect growth, what are various solutions. **[4]**

b) What are the conventional interconnect? What are their limitations? **[4]**

c) What are the effect of interconnect granularity. **[2]**

P.T.O.

Q4) a) Explain RP space area model mathematically. **[4]**

b) What is need of instruction compression? What are its technique? Which is best suitable for RD? **[3]**

c) What are the research challenges in the design and development of Reconfigurable devices? **[3]**

Q5) a) List the typical characteristics of multi context FPGA. **[3]**

b) Explain reconfigurable ALU in detail. **[3]**

c) What are merits and limitations of TSFPGA? Also give its applications. **[4]**

Q6) a) Give mathematical analysis of switch, channel and wire growth. **[5]**

b) Draw and explain architecture of DPGA. **[5]**

Q7) a) What is peak performance density? Explain with help of determining parameters. **[4]**

b) Explain static and dynamic configuration. **[2]**

c) Draw and explain architecture of matrix. **[4]**

Q8) a) Write short note on: **[8]**

i) Fine grained and coarse grained structure.

ii) Processor.

b) What is Rent Rule? Explain its importance. **[2]**