

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – II • EXAMINATION – WINTER • 2014****Subject code: 1722607****Date: 10-12-2014****Subject Name: VLSI Signal Processing****Time: 02:30 pm - 05:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 (a) Define Following. **07**
1. Iteration 2. Iteration Period 3. Loop Bound 4. Critical Loop 5. Cutset

(b) Explain Fine-Grain Pipelining using FIR Filter. **07**

Q.2 (a) Write a brief note on DSP Algorithms & its applications. **07**

(b) Discuss Signal Transition Graphs. **07**

OR

(b) Why use Parallel Processing when Pipeline Processing can be used equally well? Briefly explain with example. **07**

Q.3 (a) Compare Pipelining & Parallel Processing for VSP. **07**

(b) Write a note on Distributed Arithmetic and its Implementations & Applications. **07**

OR

Q.3 (a) Discuss Data Format Conversion. **07**

(b) Explain Parallel Multipliers. **07**

Q.4 (a) Explain Fast Convolution. **07**

(b) Discuss Redundant Number Representation. **07**

OR

Q.4 (a) Define systolic design methodology. Compare it with other design methodology. **07**

(b) Briefly explain the algorithm of unfolding. **07**

Q.5 (a) Write a note on Wave Pipelining. **07**

(b) Discuss Multiple Constant Multiplications. **07**

OR

Q.5 (a) Discuss Power Reduction Techniques. **07**

(b) Discuss features of DSP Processors. **07**
