

GUJARAT TECHNOLOGICAL UNIVERSITY**M.E –IIst SEMESTER–EXAMINATION – JULY- 2012****Subject code: 1722607****Date: 18/07/2012****Subject Name: VLSI Signal Processing****Time: 10:30 am – 13:00 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. Acyclic Precedence Graph
 6. Cutset
 7. Feed Forward Cutset
- (b)** Explain Fine-Grain Pipelining using FIR Filter. **07**
- Q.2 (a)** Write a brief note on DSP Algorithm & its applications. **07**
- (b)** Calculate the Iteration Bound using LPM Algorithm of Fig. a. **07**

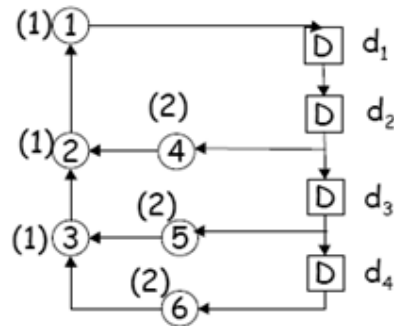
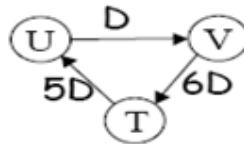


Fig. a.

OR

- (b)** Calculate the Iteration Bound using MCM Algorithm of Fig. a. **07**
- Q.3 (a)** Unfold the following DFG by factor 3. **07**



- (b)** Write a note on Systolic Array Design Methodology. **07**

OR

- Q.3 (a)** Discuss the Properties of Retiming. **07**
- (b)** Explain Fast Convolution. **07**
- Q.4 (a)** Discuss Pipeline Interleaving in Digital Filters. **07**
- (b)** Write a note on Scaling & Roundoff Noise. **07**

OR

- Q.4 (a)** Discuss Pipelining & Parallel Processing for Low Power. **07**
- Q.4 (b)** Discuss the features of DSP Processors. **07**
- Q.5 (a)** Briefly Explain Wave Pipelining. **07**
- (b)** Which are the Power Reduction Techniques? Discuss it. **07**

OR

- Q.5 (a)** Write a short note on Distributed Arithmetic. **07**
- (b)** Discuss Signal Transition Graphs. **07**
