

Paper Id:

208202

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**M. TECH.****(SEM -II) THEORY EXAMINATION 2017-18****VLSI DSP ARCHITECTURES****Time: 3 Hours****Total Marks: 70****Note:** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt *all* questions in brief.****2 x 7 = 14**

- What is the basic difference between CISC, RISC processor?
- What do you mean by fallacies?
- Give some applications of DSP processor.
- What do you mean by data hazards?
- What are the differences between DSP and normal processors?
- What do you mean by dynamic range of DSP processors?
- What are the different speed issues of DSP devices?

**SECTION B****2. Attempt any *three* of the following:****7 x 3 = 21**

- Explain the issues to be considered in designing and implementing a DSP system, with the help of a neat block diagram.
- Explain bus architecture and memory of the DSP processor.
- Explain the ADC interface in programmed I/O mode.
- Explain multi cycle implementations.
- How hardware description languages are helpful for digital system design? Explain.

**SECTION C****3. Attempt any one part of the following:****7 x 1 = 7**

- What are the different sources of errors in DSP implementations?
- Briefly explain the major features of programmable DSPs.

**4. Attempt any one part of the following:**

**7 x 1 = 7**

- (a) What are the different number formats that are used to represent signals and coefficients in DSP systems? Explain any two of them.
- (b) Discuss in brief about the data addressing capabilities of programmable DSP devices with examples.

**5. Attempt any one part of the following:**

**7 x 1 = 7**

- (a) Write a brief note on Micro Signal architecture
- (b) Explain the essential features of Instruction set architectures of CISC, RISC processor.

**6. Attempt any one part of the following:**

**7 x 1 = 7**

- (a) Explain the concept of Pipelining for speeding up the execution of an Instruction.
- (b) Discuss in brief about the basic peripherals in analog devices family of DSP devices

**7. Attempt any one part of the following:**

**7 x 1 = 7**

- (a) Briefly explain parallel I/O interface.
- (b) Explain the performance of any two recent INTEL processors.