

Code No: **R31041**

# R10

# Set No. 1

### III B.Tech I Semester Supplementary Examinations, October/November - 2017

# COMPUTER ARCHITECTURE & ORGANIZATION

**(Common to Electronics and Communication Engineering and Electronics and Instrumentation Engineering)**

**Time: 3 hours****Max. Marks: 75**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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|---|---|-------|
| 1 | a) Describe the Program flow of Control without and with interrupts with a neat diagram.        | [7M]  |
|   | b) Illustrate the Multiplication of Unsigned Binary Integers.                                   | [8M]  |
| 2 | a) What are the Typical elements of a Machine Instruction? Explain.                             | [7M]  |
|   | b) Draw and explain the state diagram of Instruction Cycle.                                     | [8M]  |
| 3 | a) Explain about the inputs and outputs of a control unit in detail.                            | [8M]  |
|   | b) Describe the Design Considerations of Microinstruction Sequencing technique.                 | [7M]  |
| 4 | a) Discuss hardware algorithms for multiplication.  | [8M]  |
|   | b) Explain about floating point arithmetic operations.  | [7M]  |
| 5 | a) What are the important characteristics of Magnetic Disks? Discuss.                           | [7M]  |
|   | b) Explain in detail about the Direct Mapping Cache organization.                               | [8M]  |
| 6 | Draw and explain the block diagram of typical asynchronous communication interface.             | [15M] |
| 7 | a) List and Explain the potential advantages of Symmetric Multiprocessors over a Uni processor. | [8M]  |
|   | b) Describe the four principle approaches to Multithreading.                                    | [7M]  |
| 8 | a) Explain in detail about the Multistage Switching Network.                                    | [8M]  |
|   | b) Discuss about the characteristics of multi processors.                                       | [7M]  |

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