

# CBCS Scheme

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15CS34

Third Semester B.E. Degree Examination, Dec.2016/Jan.2017

## Computer Organization

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing one full question from each module.

### Module-1

- 1 a. With a neat diagram, explain basic operational concept of computer. (06 Marks)  
b. What is performance measurement? Explain overall SPEC rating for computer. (04 Marks)  
c. Draw single bus structure, discuss about memory mapped I/O. (06 Marks)

OR

- 2 a. What is an addressing mode? Explain any three addressing modes with example. (10 Marks)  
b. Explain BIG-ENDIAN and LITTLE-ENDIAN methods of byte addressing with proper example. (06 Marks)

### Module-2

- 3 a. What is an Interrupt? With example illustrate concept of interrupt. (06 Marks)  
b. Define Exception. Explain 2 kinds of exception. (04 Marks)  
c. With a neat diagram explain DMA controller. (06 Marks)

OR

- 4 a. Explain PCI bus. (05 Marks)  
b. List SCSI bus signal with their functionalities. (05 Marks)  
c. Explain the tree structure of USB with split bus operation. (06 Marks)

### Module-3

- 5 a. Briefly explain any two mapping function used in cache memory. (08 Marks)  
b. With a neat diagram explain the internal organization of memory chip (2M×8 and dynamic memory chip). (08 Marks)

OR

- 6 a. Explain the following :  
i) Hit Rate and Miss penalty ii) Virtual memory organization. (08 Marks)  
b. With diagram explain how virtual memory translation take place. (08 Marks)

### Module-4

- 7 a. Draw 4-bit carry-look ahead adder and explain. (06 Marks)  
b. Perform multiplication for -13 and +09 using Booth's Algorithm. (06 Marks)  
c. Design a logic circuit to perform addition/subtraction of 'n' bit number X and Y. (04 Marks)

OR

- 8 a. Explain IEEE standard for floating point number. (06 Marks)  
b. With figure explain circuit arrangement for binary division. (10 Marks)

### Module-5

- 9 a. With a figure explain single bus organization of datapath inside a processor. (08 Marks)  
b. What are the actions required to Execute a complete instruction Add (R3), R<sub>1</sub>. (02 Marks)  
c. Give the control sequence for execution of instruction ADD (R3), R<sub>1</sub>. (06 Marks)

OR

- 10 a. Briefly explain the block diagram of camera. (08 Marks)  
b. Explain multiprocessors. Justify how time is reduced. (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.