

# CBCS SCHEME

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17CS34

## Third Semester B.E. Degree Examination, Dec.2018/Jan.2019 Computer Organization

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Explain with a neat diagram the connection between the processor and the computer memory. (05 Marks)
- b. Explain the Basic Instruction types with example. (05 Marks)
- c. Define Addressing mode, explain the various addressing modes with example. (10 Marks)

**OR**

- 2 a. Write an assembly program that reads a line of characters and display it. (05 Marks)
- b. What are assembler directives? Point out and explain the various directives with example. (05 Marks)
- c. Point out various shifts and rotate instruction and example with a neat diagram and example. (10 Marks)

### Module-2

- 3 a. Define interrupt. Point out and explain the various ways of enabling and disabling interrupts. (07 Marks)
- b. What are Exceptions? Point out and explain the different kinds of exceptions. (05 Marks)
- c. What is interrupt nesting, explain with a neat diagram the implementation of interrupt priority, using individual interrupt request and acknowledge lines. (08 Marks)

**OR**

- 4 a. What is Bus Arbitration? Explain centralized and distributed arbitration. With a neat diagram. (10 Marks)
- b. Explain Universal serial Bus tree structure and split bus operation with a neat diagram. (10 Marks)

### Module-3

- 5 a. Explain synchronous DRAMS with a block diagram. (05 Marks)
- b. Define ROM ; point out and explain various types of ROMS. (05 Marks)
- c. Define cache memory, explain various types of it with a neat block diagram. (10 Marks)

**OR**

- 6 a. What is Virtual memory? Explain virtual memory organization. (07 Marks)
- b. Explain the optical disk organization with a neat diagram. (10 Marks)
- c. Define Hit rate and miss penalty. (03 Marks)

### Module-4

- 7 a. Draw 4-bit carry-look ahead adder and explain. (10 Marks)
- b. Perform multiplication for -13 and + 9 using Booth's Algorithm and explain Booth's Algorithm process. (10 Marks)

OR

- 8 a. Explain with a neat figure the circuit arrangement for binary division. (10 Marks)  
b. Explain IEEE standard for floating point number. (10 Marks)

**Module-5**

- 9 a. Explain three – bus organization of the datapath with a neat block diagrams. (06 Marks)  
b. Explain Hard Wired Control Unit Organization in a processing unit. (06 Marks)  
c. Write the control sequence for execution of the Instruction. Add ( $R_3$ ),  $R_1$  in the execution of a complete instruction. (08 Marks)

OR

- 10 a. Explain briefly the block diagram of a digital camera. (10 Marks)  
b. With a neat block diagram, explain the working of microwave oven in an embedded system. (10 Marks)

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