

III/BCA/305

2017
(3rd Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-305

(Computer Organization and Architecture)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 50)

*The figures in the margin indicate full marks
for the questions*

1. (a) Using 4×1 multiplexers, design a common bus system for four registers and explain how it works. 8 /
 - (b) Write the graphic symbol for three-state buffer. 2
- Or
- (c) Explain different types of shift microoperations with suitable examples. 6

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- (d) What is a binary adder? Construct a circuit diagram for a 4-bit binary adder using full-adder. 4
2. (a) Write and explain the three basic computer instruction code formats. 6
- (b) Explain four phases of an instruction cycle. 4

Or

- (c) Explain the categories of computer programs with examples. 7
- (d) Explain the fields of an assembly language program. 3
3. (a) Explain one-address, two-address and three-address instructions. 6
- (b) Write the major characteristics of RISC architecture. 4

Or

- (c) Describe any four addressing modes. 6
- (d) Write the major characteristics of CISC architecture. 4
4. (a) Discuss the three modes of data transfer to and from peripherals. 6
- (b) What is asynchronous data transfer? Explain by giving a suitable diagram. 4

8G/267a

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(3)

Or

- (c) Explain Direct Memory Access (DMA) by giving a suitable block diagram. 6
- (d) Write the flowchart of the communication of CPU and IOP. 4
5. (a) Write the block diagram and function table of 128×8 RAM chip and explain how it works. 8
- (b) What is content addressable memory? 2

Or

- (c) Explain associative, direct and set-associative mapping by giving a suitable diagram. 10

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SECTION—II

(Marks : 10)

III. Answer the following questions : 2×5=10

1. What is register transfer language?

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3. Distinguish between data transfer instruction and data manipulation instruction.

(9)

4. What is memory-mapped I/O?

187

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5. What is a bootstrap-loader?

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7