II/BCA/203

2014

(2nd Semester)

BACHELOR OF COMPUTER APPLICATIONS

Course No. : 203

(Introduction to Computer Architecture and Organization)

(PART : A—OBJECTIVE)

(*Marks* : 25)

The figures in the margin indicate full marks for the questions

1. Tick (✓) the correct answer in the brackets provided :

1×5=5

    (a)   ALU consists of —— units.

        (i)   3   ( )

        (ii) 4   ( )

        (iii) 7   ( )

        (iv) 2   ( )

(b) DMA is used between —— and —— for faster data transfer.

    (i) primary storage; secondary storage

                                                     (   )

    (ii) register storage; primary storage   (   )

    (iii) CPU; secondary storage   (   )

    (iv) optical disk; hard disk   (   )

(c) Cache memory is used between —— and ——.

    (i) CPU; secondary memory   (   )

    (ii) CPU; main memory   (   )

    (iii) CPU; counter   (   )

    (iv) None of the above   (   )

(d) In which gate the output is 0 if input A and input B are similar, otherwise the output is 1?

    (i) OR gate   (   )

    (ii) NOR gate   (   )

    (iii) AND gate   (   )

    (iv) XOR gate   (   )

(e) The type of storage whose content did not persist when the power supply to the storage is turned off are called

    (i) non-volatile storage   (   )

    (ii) volatile storage   (   )

    (iii) tertiary storage   (   )

    (iv) counter-off limit storage   (   )

2. Write the differences between the following :   2×5=10

    (a) SOP and POS

(b) Program control I/O and Memory mapped I/O

(c) Cache memory and Main memory

(d) Paging and Segmentation

(e) SISD and SIMD

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

    (a) List down the assembler directives.

(b) How are flip-flops used for constructing shift registers?

(c) What do you mean by mnemonics?

(d) What is the difference between OP code and Operand?

(e) How many types of operands are there? Explain briefly.

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(2nd Semester)

BACHELOR OF COMPUTER APPLICATIONS

Course No. : 203

(Introduction to Computer Architecture and Organization)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

The figures in the margin indicate full marks for the questions

1. *(a)* Illustrate half-adder with a neat diagram.   5

   (b) Illustrate a full adder using two half-adders.   5

   Or

   (c) Differentiate between *J-K* and *R-S* flip-flops.   5

   (d) How is *T* flip-flop different from *D* flip-flop?   5

2. (a) Explain the ALU organization concept with diagram.　　8

　　(b) What is pipelining?　　2

Or

　　(c) Explain the following terms :　　2×5=10

　　　　(i) Multiprocessing

　　　　(ii) Instruction cycle

　　　　(iii) Machine cycle

　　　　(iv) Process

　　　　(v) Multithreading

3. Explain the following data transfer techniques :　　10

　　(a) Interrupt driven

　　(b) Programmed I/O

　　(c) DMA

Or

Explain the following concepts for data communication :　　10

　　(a) Synchronous data transfer

　　(b) Baud rate

　　(c) Bit-error rate

　　(d) Strobes and handshaking

(3)

4. (a) Explain RAM and ROM with appropriate diagrams.   8

(b) What is virtual memory?   2

Or

(c) Explain the following in detail :   5+5=10
(i) Three-state buffer registers
(ii) Controlled synchronous

5. (a) Why are linkers and loaders useful for executing a program?

(b) Explain briefly the function of the following :
(i) External procedures
(ii) Parameter passing   10

Or

(c) Write short notes on (any *three*) :   10
(i) External procedures in assembly language
(ii) Assembler and debugger
(iii) Stack and queue
(iv) .COM and .EXE files
(v) Interpreter

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