

Roll No.....

Total No. of Sections : 03

Total No. of Printed Pages : 03

Code No. : C-393

Annual Examination - 2018

BCA - III

BCA - 301

Paper - III

COMPUTER SYSTEM ARCHITECTURE

Max.Marks : 50

Time : 3 Hrs.

Min.Marks : 20

Note : Section 'A', containing 10 very short-answer-type questions, is compulsory. Section 'B' consists of short answer type questions and Section 'C' consists of long answer type questions. Section 'A' has to be solved first.

Section - 'A'

Answer the following very short-answer-type questions in one or two sentences : **(1 × 10=10)**

- Q.1 Convert $(1100011)_2$ to octal.
- Q.2 Convert $(3783.25)_{10}$ to Binary.
- Q.3 Write the truth table on XOR gate?
- Q.4 Show the Boolean expression and symbol for NAND gate.
- Q.5 Write the abbreviation of following
(i) SMPS (ii) AR and PC
- Q.6 What is DR?
- Q.7 Define the Asynchronous trasmission.

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- Q.8 What is DMA?
- Q.9 What is semiconductor?
- Q.10 Explain SRAM.

Section - 'B'

Answer the following short-answer-type questions with word limit 150-200 : (3 5=15)

- Q.1 Explain with example :
 - (i) Gray code
 - (ii) Excess - 3code

OR

Convert the following :

- (i) $(624)_8 = ()_{10}$
- (ii) $(6EA)_{16} = ()_2$

- Q.2 Explain the working of full adder with suitable example.

OR

Write short note on RAM and ROM.

- Q.3 Explain the architecture and pin out diagram of microprocessor.

OR

Draw and explain the logic diagram of ALU.

- Q.4 Explain input/output interface.

OR

Explain the synchronous and asynchronous data transfer.

- Q.5 How auxiliary memory is different from other types of memory.

OR

Write short note on cache memory.

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Section - 'C'

Answer the following long-answer-type questions with word limit 300-350 : (5 5=25)

- Q.1 What do you mean by 1's and 2's complement in Binary number System?

OR

What do you mean by number system? Explain the EBCDIC number system in detail.

- Q.2 Simplify the Boolean function :
 $F(A,B,C,D) = (0,1,2,8,9,12,13)$

OR

What is flip - flop? How RS flip-flop can be converted to Jk flip-flop? Explain its working with block diagram.

- Q.3 Explain CPU organization in detail with necessary block diagram.

OR

Explain common organization of basic computer with diagram.

- Q.4 Explain Asynchronous data transfer using handshaking method.

OR

Discuss the DMA driven data transfer technique.

- Q.5 Explain memory hierarchy. Differentiate between address and memory space.

OR

How Auxiliary memory is different from other types of memory? Discuss advantages and disadvantages.