

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.

**P.T.O.**

(2) Code No. : C-393

- 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.

(3) Code No. : C-393

**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.