Roll No.....

Total No. of Sections : 03

Total No. of Printed Pages : 03

Code No. : C-393

Annual Examination - 2019

BCA Part - 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 $(1101010.001)_2$ into $(\ )_8$

Q.2 Convert $(625.67)_{10}$ into $(\ )_2$

Q.3 Convert $(AB32)_{16}$ into $(\ )_{10}$

Q.4 A collection of lines that connects several devices is called_____.

Q.5 A single 1GB is equal to _____ MB.

Q.6 What is Hit ratio?

Q.7 State De' morgans law?

P.T.O.

Q.8 Write full form for SMPS and DMA.

Q.9 What is half adder?

Q.10 What is ment by Access time?

Section - 'B'

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

Q.1 State the procedure for conversion of BCD to Excess-3 code.

OR

Explain with example conversion of the following :

(i) Decimal to Hexadecimal

(ii) Octal to binary

Q.2 Explain the working of full adder with neat and clean diagram giving example.

OR

Discuss atleast 3 logic gates along with their truth table.

Q.3 Write a note on CPU organization?

OR

Explain the pin and architecture of microprocessor.

Q.4 Describe the handshanking procedure.

OR

Differentiate between serial and parallel communication.

Q.5 Discuss semiconductor memories.

OR

Define page table. Mention its types.

Section - 'C'

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

Q.1 Define number system. Write a procedure to convert the decimal to binary?

OR

What is ment by 1's and 2's complement and describe how it is useful in addition and subtraction?

Q.2 Simplify the following expression using K-Map :

$$Y = A\,B\,C\,D + A\,B\,C\,D + A\,B\,C\,D + A\,B\,C\,D + A\,B\,C\,D$$

OR

Explain the working of JK flip flop. What is its advantage over RS flip flop?

Q.3 What are the different types of Registers available with a microprocessor?

OR

Explain Binary counter with neat and clean diagram.

Q.4 Explain type of interrupts. Discuss the interrupt cycle.

OR

Explain asynchronous data transfer using handshaking method.

Q.5 What do you mean by virtual memory? Explain the various page replacement techniques.

OR

Discuss the pros and cons of Auxiliary memory. How it is different from the other memories?

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