**19P165** (Pages: 2) Name: …….……

Reg. No…….……...

**FIRST SEMESTER M.Sc. DEGREE EXAMINATION, NOVEMBER2019**

(CUCSS-PG)

**CC19P CSS1 C05 - COMPUTER ORGANIZATION AND ARCHITECTURE**

(Computer Science)

(2019 Admission Regular)

Time: Three Hours Maximum: 30 Weightage

## Part A

Answer any ***four*** questions. Each question carries 2 weightage.

1. Convert the numbers
   a. $(ABC)_{16}$ = ( )$_{10}$
   b. $(234)_{8}$ = ( )$_{10}$
   c. $(189)_{10}$ = ( )$_{2}$
   d. $(101.20)_{16}$ = ( )$_{2}$
2. What is an error? How does error detection take place using parity checking?
3. How an instruction is executed in the CPU?
4. Explain two bus architecture.
5. What is array multiplier?
6. Write down the significance of cache memory?
7. What is 8-bit microprocessor?

**(4 x 2 = 8 Weightage)**

## Part B

Answer any ***four*** questions. Each question carries 3 weightage.

8. Explain the concepts
   a. Shift registers
   b. Full Adder
9. Differentiate hardwired and microprogrammed control.
10. Explain restoring division algorithm with suitable example.
11. Explain Booths Algorithm with example.
12. Write short notes on
    a. Vectored interrupts
    b. Hardware interrupts
13. Explain set associative mapping in cache memory.
14. Draw the functional block diagram of 8085.

**(4 x 3 = 12 Weightage)**

## Part C

Answer any ***two*** questions. Each question carries 5 weightage.

15. Explain in detail the architecture of 8086 microprocessors.

16. a. Simplify the following Boolean function in sum of products form using K-Map

    F (P, Q, R, S) =∑(1,2,3,7,8,9,10,13,14)

    b. Simplify the following Boolean function in product of sum form using K-Map

    F (I, J, K, L) =∏(2,4,6,7,8,9,10)

17. Explain in detail the block diagram of 8051 microcontrollers.

18. What is the significance of DMA? Explain DMA with proper diagram.

**(2 x 5 = 10 Weightage)**

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