

18P139

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Name:

Reg. No.....

FIRST SEMESTER M.Sc. DEGREE EXAMINATION, NOVEMBER 2018

(Regular/Supplementary/Improvement)

(CUCSS-PG)

CC17P CSS1 C05 - COMPUTER ORGANIZATION AND ARCHITECTURE

(Computer Science)

(2017 Admission onwards)

Time: Three Hours

Maximum: 36 Weightage

PART A

Answer *all* questions. Each question carries 1 weightage.

1. What is ASCII? Where it is used?
2. How we can represent a floating point number?
3. What is a branch instruction?
4. List the difference between microcontroller and microprocessor.
5. Write note on burst transfer.
6. What is memory hierarchy?
7. What is single bus and two bus organization?
8. Write note on locality of reference.
9. Explain the term array multiplier.
10. What is assembly language program? Give an example.
11. Perform the subtraction operation using 2's complement method and verify the answer using 1's complement method.
12. Write one application of NAND gate.

(12 x 1 = 12 Weightage)

PART B

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

13. What are micro instruction types?
14. Explain modified booth algorithm with an example.
15. Explain the terms
 - a) Shift registers
 - b) Counters
16. Give note on non vectored interrupt.
17. What is a Flip flop? Explain S R flip flop and J K flip flop with truth table.
18. Draw pin of 8085 microprocessor.

19. Explain the terms
a) Hardwired control b) Microprogrammed control
20. Distinguish between asynchronous and synchronous data transfer.
21. Explain interrupts in 8051 microcontroller.

(6 x 2 = 12 Weightage)

PART C

Answer any *three* questions. Each question carries 4 weightage.

22. Explain the working of DMA structure with neat diagram.
23. Explain the terms
a) Addressing modes b) Instruction cycle c) System bus
24. Explain restoring and non restoring division algorithm with example.
25. Describe the working of cache memory.
26. Simplify the following Boolean function in sum of products forms by using a 4 variable k map

$$F(A, B, C, D) = \sum(0, 2, 3, 5, 6, 7, 8, 10, 11, 14, 15)$$

Also simplify the following Boolean function in product of sum forms by using a 4 variable k map

$$F(A, B, C, D) = \pi(2, 6, 8, 9, 10, 11, 14)$$

27. Explain the pin diagram and architecture of 8086.

(3 x 4 = 12 Weightage)
