Deptt.

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M1MCA02/CT02

M.C.A. Ist Semester Examination 2017-18

COMPUTER ORGANIZATION

PAPER-II

Time : Three Hours
Maximum Marks : 80

PART - A

[Marks : 20

Answer all questions (50 words each).

All questions carry equal marks.

PART - B

[Marks : 40

Answer *five* questions (250 words each).

Selecting *one* from each unit. All questions carry equal marks.

PART - C

[Marks : 20

Answer any *two* questions (300 words each).

All questions carry equal marks.

PART - A

UNIT - I

1. (i) Differentiate between an assembler and a compiler.

(ii) Name the main technical component used in the second generation computers. Write the name of the inventor, place and year in which this component was invented.

UNIT - II

(iii) What are the special characteristics of CISC machines ?

(iv) What is the role of cache memory ?

UNIT - III

(v) What do you mean by circuit equivalence.

(vi) What is a latch ?

UNIT - IV

(vii) What is the first field of every instruction of IJVM ?

(viii) How many stages are there in the pipeline used in MIC-4 ?

UNIT - V

(ix) How many PINS are there on 8085 microprocessor chip ?

(x) What do we understand by addressing mode ?

PART - B

UNIT - I

2. Describe languages, levels and virtual machines in detail.

3. Describe major developments of first generation computers.

UNIT - II

4. Compare RISC versus CISC. Discuss some of the design principles of modern computers.

5. Describe pipelining in detail.

UNIT - III

6. Describe about integrated circuits in detail.

7. Design and demonstrate on 8-input multiplexer circuit.

UNIT - IV

8. Describe various control signals with their impact in MIC-1 machine.

9. Describe 7 segment pipeline used in MIC-4 and some issues related to this deep pipelining.

UNIT - V

10. Describe details of the read and write operations with memory data in 8085 microprocessor.

11. Describe direct and register indirect addressing modes available in 8085 microprocessor.

PART - C

UNIT - I

12. Describe about third and fourth generation computers in detail.

UNIT - II

13. Describe the steps involved instruction execution in detail.

Try to write an interpreter for a simple computer ?

UNIT - III

14. Draw logic diagram of a 4×3 memory and describe read and write operation with this design. Is there any role of noninverting buffers ?

UNIT - IV

15. Describe implementations of INVOKEVIRTUAL and IRETURN IJVM instructions using MIC-1 architecture. Microprograms for these two instructions are expected in the answer.

UNIT - V

16. Describe addressing modes available in 8085 microprocessor. Write an assembly language program to add two 16-bit numbers.