



II Semester B.C.A. Examination, June/July

(NEP Scheme)

COMPUTER APPLICATIONS

Paper – 2.1 : Computer Architecture

Time : 2½ Hours

Max. Marks : 60

Instruction : Answer all the Sections.

SECTION – A

I. Answer any four questions. Each question carries two marks. **(4×2=8)**

- 1) Define computer architecture.
- 2) What is register ? List different types of registers.
- 3) Define flip – flop. Mention its types.
- 4) Write the symbol and truth table for NOR gate.
- 5) Define RAM and ROM.
- 6) Define operation code and operand.

SECTION – B

II. Answer any four questions. Each question carries five marks. **(4×5=20)**

- 7) Simplify $F(A, B, C, D) = \sum m(1, 5, 7, 8, 9, 13) + \sum d(3, 12)$ using k-map.
- 8) What is MUX ? Explain 4 to 1 line MUX with a neat diagram.
- 9) Explain working of SR flip – flop with a neat diagram.
- 10) Explain different types of computer instructions based on number of address fields.
- 11) Explain I/O interface unit with a neat diagram.
- 12) Explain memory hierarchy in a computer system.

SECTION – C

III. Answer any four questions. Each question carries eight marks. **(4×8=32)**

- 13) Explain the working of full adder with a neat diagram. 8
- 14) a) Explain stack organizations. 4
- b) Explain address bus, data bus and control bus. 4

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- 15) Explain different types of addressing modes. 8
- 16) a) Explain different types of CPU organizations. 4
b) List the difference between RISC and CISC. 4
- 17) Explain the working of DMA controller with a neat diagram. 8
- 18) a) List the differences between memory mapped I/o and isolated I/o. 4
b) Explain cache memory. 4
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