



SS – 684

V Semester B.C.A. Degree Examination, Nov./Dec. 2018  
(CBCS) (F + R)

(2016-17 and Onwards)

COMPUTER SCIENCE

BCA-503 : Computer Architecture

Time : 3 Hours

Max. Marks : 100

**Instruction : Answer all Sections.**

SECTION – A

- I. Answer **any ten** questions : (10×2=20)
- 1) Explain Full adder.
  - 2) Define universal gates with logic circuit.
  - 3) Explain BSA instruction.
  - 4) State De-Morgan's theorem.
  - 5) Define Flip-Flop.
  - 6) Why we use shift register ?
  - 7) Explain Hamming code ?
  - 8) Define Indirect Address Mode.
  - 9) What is meant by Memory-Mapped I/O ?
  - 10) Define virtual memory.
  - 11) What is Parity bit ?
  - 12) Define types of RAM.

SECTION – B

- II. Answer **any five** questions : (5×5=25)
- 13) Explain the steps involved in design of combinational circuit.
  - 14) Write a note on program counter and stack memory.
  - 15) What is a Karnaugh Map ? Explain different types of Karnaugh Maps.
  - 16) Explain any five register reference instructions.

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- 17) Write a note on Cache memory.
- 18) Compare CISC and RISC processors.
- 19) What are the important characteristics of memory ?
- 20) Explain timing signals.

## SECTION – C

III. Answer **any three** questions. Each question carries **fifteen** marks. (3×15=45)

- 21) Explain the types of program interrupts.
- 22) a) Simplify  $F(A, B, C, D) = \sum m (1, 2, 4, 6, 8, 10, 12, 14)$  and draw a circuit diagram. 10
- b) What is a parity Bit ? Explain in brief. 5
- 23) Explain types of CPU organization.
- 24) a) Explain I/O commands. 6
- b) Explain common BUS organization of a Basic computer. 9
- 25) a) Explain Memory hierarchy. 6
- b) Explain different Addressing Modes. 9

## SECTION – D

IV. Answer **any two** questions. (1×10=10)

- 26) a) Explain direct Address and Indirect Address Modes. 5
- b) Explain the working of R-S flip-flop. 5
- 27) a) Explain 8 to 3 Encoder. 5
- b) Discuss error detection and correction codes. 5

