



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.

P.T.O.



- 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. 10
- 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. 6
- 24) a) Explain I/O commands. 9
- b) Explain common BUS organization of a Basic computer. 6
- 25) a) Explain Memory hierarchy. 9
- b) Explain different Addressing Modes. 6

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