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 :
(10x2=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 :  
(5x5=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. (3x15=45)
21) Explain the types of program interrupts.
22) a) Simplify F(A, B, C, D) = Σm (1, 2, 4, 6, 8, 10, 12, 14) and draw a circuit diagram.
   b) What is a parity Bit? Explain in brief.
23) Explain types of CPU organization.
24) a) Explain I/O commands.
   b) Explain common BUS organization of a Basic computer.
25) a) Explain Memory hierarchy.
   b) Explain different Addressing Modes.

SECTION – D

IV. Answer any two questions. (1x10=10)
26) a) Explain direct Address and Indirect Address Modes.
   b) Explain the working of R-S flip-flop.
27) a) Explain 8 to 3 Encoder.
   b) Discuss error detection and correction codes.