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.

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.

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.

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**