BCA(Hons) Semester – III Examination 2020
Subject: Computer Organization and Architecture
Paper: BCA-302

Time: 3 Hours **Full Marks: 80**

The figures in the right margin indicate full marks

A. Answer *any five* questions. **5x10= 50**

1. Discuss functionality of Control Bus. Briefly explain the different Bus Organizations with proper diagrams. Consider a memory capacity of 4096×16. What are the sizes of Data Bus and Address Bus for this organization? 2+4+4

2. Differentiate between SRAM and DRAM. What is Register? What is the significance of using Cache Memory? What do you mean by 'Locality of Reference'? 3+2+2+3

3. What do you mean by EA? What is the basic computer instruction format? Differentiate between Indirect Addressing Mode and Register Indirect Addressing Mode? What are the functionalities of CPU? 2+2+4+2

4. What is Opcode? What are the different designs of CU? Discuss the different features of any one type of CU . 2+4+4

5. Briefly explain the Fetch and Execution cycles of the Instruction Cycle with proper diagrams. 5+5

6. How many address lines are needed to specify 2K×16 memory units? Explain Direct Addressing Mode. What is Machine Cycle? 3+5+2

7. What do you mean by SISD, SIMD, MISD, and MIMD? What is Instruction Pipeline Processing? 5+5

B. Answer *any Six* questions. **6x5= 30**

1. Define System Bus. What do you mean by Data Bus and Address Bus?

2. What do you mean by MAR, MBR, PC?

3. Discuss the meanings of the following Computer Instructions: ADD, LDA, STA, CLA, HLT, INC.

4. What do you mean by Micro programs, Micro-instructions, and Control Memory?

5. What is Program Interrupt? Why Interrupt is needed in Input-Output organization?

6. Briefly discuss RISC, and CISC architectures.

7. Explain DMA operation in association with CPU with proper diagram.

8. Write short notes on Von-Neumann Architecture.