

**B. Tech 4th Semester Examination**

**Computer Organization and Computer Architecture (NS)**

**IT-222**

**Time : 3 Hours**

**Max. Marks : 100**

*The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.*

**Note :** Attempt five questions in all, by selecting one question from each of sections A, B, C & D. Question no. 9 in section E is compulsory. All questions carry equal marks.

**SECTION - A**

1. Draw the block diagram of a computer and explain the function of its important components. List the various D/o and memory devices used in computers. (20)
2. With diagram explain the functions of 8 to 1 MUX and 3 to 8 Decoder. (20)

**SECTION - B**

3. (a) Explain with examples:
  - (i) Instruction formats.
  - (ii) three address instructions. (10)(b) Explain subroutine linkages. (10)
4. Discuss:
  - (a) The difference between RISC & CISC.
  - (b) Role of stack in a computer.
  - (c) Relationship between instruction & machine cycle. (20)

[P.T.O.]

**SECTION - C**

5. Discuss with relative merits and demerits various D/o data transfer techniques. (20)
6. Write a detailed note on virtual memory. (20)

**SECTION - D**

7. (a) What do you mean by SIMD and MIMD? Explain with diagram. (10)  
(b) Characteristics of multiprocessor systems. (10)
8. Explain the concept of pipeline. Discuss instruction pipeline and arithmetic pipeline. (20)

**SECTION - E  
(Compulsory)**

9. Explain:
  - (a) Characteristics of memory devices.
  - (b) List the broad category of instructions which any computer should have.
  - (c) Role of software interrupts.
  - (d) Role of hardware interrupts.
  - (e) VLIW machine features.
  - (f) Role of network.
  - (g) Role of clock in a computer.
  - (h) What do you mean by computer boot up?
  - (i) Role of cache memory.
  - (j) Serial and parallel Bus Architecture. (2×10=20)