

**B.TECH. DEGREE III SEMESTER (SUPPLEMENTARY) EXAMINATION IN  
COMPUTER SCIENCE AND ENGINEERING  
JUNE 2002**

**CS 305 COMPUTER ORGANISATION  
(1998 Admissions)**

Time: 3 Hours

Maximum Marks: 100

- I. (a) What are the different types of bus structures available in a computer? Explain. (10)  
(b) Explain the different formats of instructions of IBM-370 with examples. (10)  
**OR**
- II. (a) What are subroutines? Explain the parameter passing in subroutines with example. (10)  
(b) What is straight-line sequencing? Explain the execution of a branch instruction. (10)
- III. (a) Explain the microprogrammed control unit and derive the advantages of microprogrammed control unit over hardwired control unit. (12)  
(b) What are the advantages of fast adders. (8)  
**OR**
- IV. (a) Write notes on IEEE floating point standard. (8)  
(b) Write the sequence of control signals for a single bus organization for the following instructions:  
(i) Add the number stored in memory location NUM to register R<sub>1</sub>.  
(ii) Add contents of the memory location whose address is in memory location NUM to register R<sub>1</sub>. (12)
- V. (a) What are interrupts? How are they useful in computer systems? (10)  
(b) Enumerate the function performed by an I/O interface. (10)  
**OR**
- VI. (a) Explain the operating principle of laser printer. (8)  
(b) Explain any two methods for implementing I/O data transfer. (12)
- VII. (a) Explain memory management unit. (12)  
(b) Explain the block set associative mapping technique involved in Cache memory. (8)  
**OR**
- VIII. (a) Explain the terms:  
(i) Memory access time (ii) Memory cycle time  
(iii) Write through (iv) Locality of reference  
(v) Logical address (10)  
(b) Design a static memory 4MB × 8 by using 256K × 1 memory chips. (10)
- IX. (a) Explain Flynn's classification of parallel processing methods. (10)  
(b) Write short notes on:  
(i) Arithmetic pipeline  
(ii) Instruction pipeline. (10)  
**OR**
- X. (a) Differentiate between:  
(i) Loosely coupled and tightly coupled multiprocessor configuration  
(ii) Pipelined and non pipelined processors. (12)  
(b) Explain the main features and applications of super computers. (8)

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