2008 JAWAHARLAL NEHRU UNIVERSITY [JNU]
III B.TECH I SEMESTER SUPPLIMENTARY EXAMINATIONS
COMPUTER ORGANIZATIONS
(COMMON ELECTRICAL & ELECTRONIC ENGINEERING
ELECTRONIC & COMMUNICATION ENGINEERING)

FEBRU 2008

TIME : 3 HOUR
MARK : 80

ANSWER ANY FIVE QUESTIONS ALL QUESTIONS CARRY EQUAL MARKS

1. (a) Explain about various buses such as internal, external, backplane, I/O, system, address, data, synchronous and asynchronous.

(b) Distinguish between high level and low level languages? What are the requirements for a good programming language ?

2. Design a circuit to increment, decrement, complement and clear a 4 bit register using RS flip-flops. Explain the control logic.

3. (a) Differentiate between microprogramming and nanoprogramming.

(b) Hardwired control unit is faster than microprogammed control unit. Justify this statement.

4. (a) How many bits are needed to store the result addition, subtraction, multiplication and division of two n-bit unsigned numbers. Prove.

(b) What is overflow and underflow? What is the reason? If the computer is considered as infinite system do we still have these problems.

5. Compare and contrast Asynchronous DRAM and Synchronous DRAM.

6. What are the different kinds of I/O Communication techniques? What are the relative advantages and disadvantages? Compare and contrast all techniques.

7. Explain the following with related to the Instruction Pipeline

(a) Pipeline conflicts

(b) Data dependency

(c) Hardware interlocks

(d) Operand forwarding

(e) Delayed load

(f) Pre-fetch target instruction

(g) Branch target buffer

(h) Delayed branch.

8. (a) Explain the working of 8 x 8 Omega Switching network1 of 2

(b) Explain the functioning of Binary Tree network with 2 x 2 Switches. Show a neat sketch.