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B. TECH
BCSE 3303

FIFTH SEMESTER EXAMINATION – 2005

**COMPUTER ARCHITECTURE AND
ORGANIZATION**

Full Marks – 70

Time : 3 Hours

*The figures in the right hand margin indicate
full marks for the questions.*

Answer any six questions including question No. 1.

1. Answer the following questions : 2×10
- (a) What is the basic performance equation ?
 - (b) What do you mean by addressing mode ?
 - (c) How many signal lines are there in address bus of 8085 microprocessors which are used in high order address bus ?
 - (d) What do you mean by instruction cycle ?

P.T.O.

- (e) What do you mean by Booth's Algorithm ?
- (f) What is a floating point ? Express the number .000021 in floating point form.
- (g) What do you mean by optical memories ?
- (h) What is use of virtual memory ?
- (i) Add +25 to +14 using the 8-bit 1's complement arithmetic.
- (j) What is the use of count register ?

2. Why the addressing mode is used in the computer ? Explain various address modes are used in the computers. 10

3. (a) What is the benefit of using a multiple-bus architecture compared to a single-bus architecture ? 5

(b) What are the differences among sequential access and direct access ? 5

4. (a) What is an instruction ? Explain about fetch cycle and execution cycle. 5

(b) Write an assembly language program to find the bigger of the two different numbers X and Y. 5

5. (a) What do you mean by register Transfer Language ? 5

(b) Describe briefly with examples about three-address, two address, one address instructions. 5

6. (a) Discuss the function of the following signals of 8085 processors. 5

\overline{RD} , \overline{WR} , ALE, S_0 and S_1 .

(b) Write notes on CD-ROM and WORM. 5

7. What is cache memory ? Explain in detail about its operations. Write the hierarchy of memory in a computer. 10

8. (a) Draw and explain the timing diagram for memory read operation. 5
- (b) Write notes on Virtual memory and Auxiliary memory. 5

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