

Roll No.

BCA-303(N)

B. C. A. (Third Semester)

EXAMINATION, Dec., 2013

(New Course)

Paper Third

COMPUTER ARCHITECTURE AND ASSEMBLY LANGUAGE

Time : Three Hours]

[Maximum Marks : 75

Note : Section A is compulsory. Attempt any *seven* questions from Section B and *one* question from Section C.

Section—A

1. Write an 8085 assembly language program to perform multiplication of two 8 bit binary numbers stored at memory location 3000 H, 3001H and store results at memory location 4000H and 4001 H. 8
2. Explain Booth's algorithm to multiply the following pair of signed two's complement nos : 7

A = 110011 (Multiplicand)

B = 101100 (Multiplier)

Section—B

6 each

3. What do you mean by instruction ? Explain the role of different fields (parts of instruction) of binary instruction.
4. Explain the role of stack pointer (SP) and program counter (PC) of 8085 microprocessor.

5. Classify the different groups of 8085 instruction set with example.
6. Explain the role of different flags of 8085 microprocessor and show their bit position in flag register.
7. What do you mean by interrupt ? What are the differences between external and internal interrupts ?
8. A computer has 16 registers, an ALU with 32 operations, and a shifter with eight operations, all connected to a common bus system :
 - (a) Formulate a control word for a microoperation.
 - (b) Specify the number of bits in each field of the control word and give a general encoding scheme.
 - (c) Show the bits of the control word that specify the micro-operation :

$$R_4 \leftarrow R_5 + R_6$$

9. What do you mean by locality reference ? Explain with suitable example.
10. Describe different types of modes of transfer with advantages and disadvantages with respect to others.
11. Differentiate between primary memory and secondary memory.

Section—C

18 each

13. Draw pin diagram of 8085 microprocessor and explain the role of each pin in brief.
14. Write short notes on the following :
 - (a) Input/Output Interface
 - (b) RISC and CISC
 - (c) Vector processing
 - (d) DMA

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