

[4]

BCA-303(N)

Section—C

18 each

13. Draw the pin diagram of 8085 Microprocessor and explain the role of each pin.

14. Write short notes on the following :

- (a) Asynchronous data transfer
- (b) DMA
- (c) Pipeline processing with example of instruction pipeline

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**B. C. A. (Third Semester)
EXAMINATION, Dec., 2014**

(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 any one question from Section C.

Section—A

1. 20 bytes of data are stored in memory location starting at XX60 H. (H notation for Hexadecimal representation). Transfer the entire 20 bytes of data to new memory location starting at XX80 H using 8085 μ processor assembly language. 7

2. Discuss the following instruction with example. (for intel 8085 microprocessor) : 8

- (a) RAR and RLC
- (b) Push and POP instruction (with proper format)
- (c) Call and return instruction (with proper format)
- (d) LXIH, 2080

2400

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Section—B

6 each

3. Write two instructions each for the given addressing modes below. Explain each instruction also (in 8085 instruction set) :

- (i) immediate
- (ii) implied
- (iii) direct
- (iv) indirect

4. Show the CPU organisation having 16 registers with 32 bit each, an ALU and a destination decoder. Formulate the control word for the system assuming ALU has 35 operations.

5. Compare RISC and CISC.

6. Classify the different groups of 8085 instruction set with example.

7. What is a flag register ? Show and discuss about the bit position in flag register. What is the meaning of the following instruction (in 8085 μ p)

PUSH PSW, 2080 ?

8. What is an interrupt ? How is it different from subroutine call ? Differentiate between external and internal interrupt.

9. Discuss Booth's algorithm to multiply the following pairs of signal 2's complement numbers :

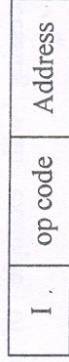
A (multiplicand) = 10111

B (multiplier) = 11001

10. What is instruction cycle ? Explain the instruction cycle (through a flow chart) for a program written in a computer with 16 bit instruction and 12 bit address with the possible instruction format as below :

(a) Memory reference instruction :

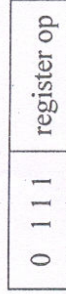
14 12 11 0



op code = 000 to 110

(b) Register reference instruction :

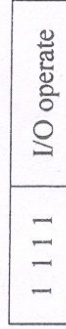
15 12 11 0



I = 0

(c) I/O instruction :

15 12 11 0



I = 1

11. Write the technique used for floating point addition of the following numbers :

A = $.5372400 \times 10^2$

B = $.1580000 \times 10^{-1}$

12. What is the use of the following registers ?

- (a) Program counter
- (b) Stack pointer
- (c) Instruction register
- (d) Accumulator