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BCA-303(N)

# BCA-303(N)

## B. C. A. (Third Semester) EXAMINATION, Dec., 2017

(New Course)

Paper Third

### COMPUTER ARCHITECTURE AND ASSEMBLY LANGUAGE

Time : Three Hours ] [ Maximum Marks : 75

Note : Attempt questions from all Sections as directed.

Inst. : The candidates are required to answer only in serial order. If there are many parts of a question, answer them in continuation.

#### Section—A

##### (Short Answer Type Questions)

Note : All questions are compulsory. Each question carries 3 marks.

1. (A) Discuss computer architecture and computer organisation.
- (B) Discuss the following addressing models in 8085 :
  - (i) Direct
  - (ii) Register
  - (iii) Immediate

- (C) Discuss the following instructions with meaning :
  - (i) LDA 2050
  - (ii) JZ 2080
  - (iii) Write an instruction for calling a function (subroutine) starting at 2090
- (D) What is Input-Output Processor (IOP) ?
- (E) Differentiate RISC and CISC architecture.
- (F) Show different pin info of 8085  $\mu$  P.
- (G) Discuss the different data manipulation instruction in 8085.
- (H) Write an 8085 assembly language program to mask off four most significant bits of a 8 bit number stored in Register B.
- (I) Discuss flag register in 8085.

#### Section—B

##### (Long Answer Type Questions)

Note : Attempt any two questions. Each question carries 12 marks.

2. (a) Discuss Instruction Cycle.
- (b) What is micro-operation ? What are the different types of it ?
3. (a) Discuss general register organisation with 16 registers with schematic diagram. What will be the control word if opcode size is 6 bit.
- (b) Show bus design to handle 16 register each 8 bit.

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4. (a) What is DMA ? Discuss in detail the process involving DMA.
- (b) How Pipeline increases system efficiency ? Discuss instruction pipeline in detail.
5. (a) Discuss Booth algorithm to multiply 10101 and 11100. Apply Booth Algorithm.
- (b) Discuss architecture on vector processor.

**Section—C**

**(Long Answer Type Questions)**

**Note :** Attempt any *two* questions. Each question carries 12 marks.

6. (a) Discuss the different modes of data transfer in detail.
- (b) Discuss different data transfer instructions with examples. <http://csjmuonline.com>
7. (a) Write programming model of 8085  $\mu$ p. What is PC, SP ?
- (b) What is priority interrupt ? Discuss a method to handle it.
8. Discuss the need for asynchronous data transfer. Discuss handshaking method.
9. (a) What is memory interfacing of a RAM (4096  $\times$  8) with 8085  $\mu$ p.
- (b) Write an 8085 Assembly Language Program to find the largest of 10 numbers stored in memory starting at memory location 2040H.  
The result to be stored in 3000H. (H means Hexadecimal representation).

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