B.C.A Examination, Dec. 2018
COMPUTER ARCHITECTURE & ASSEMBLY LANGUAGE
(BCA-303) (New Course)

Time: Three Hours **Maximum Marks : 75**

Note : Attempt questions from all Sections as per instructions

Section-A
(Very Short Answer Questions)

Attempt all the five question Each question carries 3 marks. Very short answer is required. 3 x5=15

1. What are the three major phases through which the control unit go through an instruction cycle ?

2. Write a note on computer registers.

3. What do you understand by interleaved D.M.A.?

4. What is asynchronous data transfer ?

5. Distinguish between fixed point and floating point representation.

Section-B
(Short Answer Questions)

Attempt any two questions out of the three questions. Each question carries 7½ marks. Short answer is required.

6. (a) Differentiate between RISC and CISC.

(b) What is the difference between hardwired control and microprogrammed ?

7. Draw and explain a 4- bit arithmetic circuit which can perform the following:

(a) Add

(b) Add with carry

(c) Subtract with borrow

(d) Subtract

(e) Transfer of A

(f) Increment

(g) Decrement.

8. Write an assembly language program to add 'n' number where the numbers are stored in 'n' consecutive locations (NUM, NUM+1......NUM + n-1) and to store the result in memory location SUM. The number 'n' is stored in memory location N.

Section-C
(Detailed Answer Questions)

Attempt any three questions out of the following five questions. Each question carries 15 marks. Answer is required in detail. 15x3=45

9. (a) Perform the subtraction of the following unsigned decimal number by taking 10's complement of the subtrahend:

7452 - 1243

(b) Perform the subtraction of the following unsigned binary number by taking 2's complement of the subtrahend:

11010-1101

(c) What is the use of macros in I/C instruction ?

10. Draw a block diagram for data transfer from CPU to an interface and then to an I/O device. Determine the procedure for setting and clearing the flag bit.

11. What is a difference between a direct and indirect address instruction ? How many references to memory are needed for each tune of instruction bring an operand into a processor register?

12. Draw and explain one stage of an ALU with shift capability along with the microoperations performed

13 Write short notes on any three of the following:

(a) Arithmetic pipelining

(b) Instruction set

(c) Interrupts useful in improving processing efficiency

(d) Array processor

(e) Serial communication.