1484/III

B.C.A. (Part-II) EXAMINATION, 2023-24

[IIIrd SEMESTER]

1525

(BCA 304: Computer Organization and Architecture)

Paper : IV

Time : Three Hours]   [Maximum Marks : 70

Note: (i)   Answer **five** questions in all.

(ii)   Question No. **1** is **compulsory**.

(iii)   Answer remaining **four** questions, selecting

two from each Section **A** and **B**.

(iv)   All questions carry equal marks.

1.   Answer all parts of the following :

(a)   Give the difference between RAM and ROM.

(b)   Find 2's and 1's complement of the number-

18 and 17

(c)   Explain working of encoder.

(d)   Explain the concept of cache memory.

Section-A

2. Explain the bus architecture with its types. Also, discuss the I/O bus architecture with block diagram.

3. Solve the following :

   (a) $(721)_8 + (325)_8$

   (b) $(1000011)_2 - (111110)_2$

   (c) $(-976)_{10} + (-377)_{10}$

4. Give the generalized architecture of CPU and explain the function of different units therein.

5. What do you mean by addressing modes? Explain various types of addressing modes.

Section-B

6. (a) Explain the floating point representation with example.

   (b) Draw the flowchart for instruction cycle with neat diagram and explain.

7. (a) What do you mean by synchronous and asynchronous communication ?

 (b) Draw a diagram of bus system using MUX which has four registers of size 4 bits each.

8. (a) Explain memory hierarchy in detail.

 (b) Draw the logic diagram of a 3×8 decoder.

9. Write notes on any **two** of the following :

 (a) ALU

 (b) Division algorithm

 (c) DMA

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