UNIVERSITY OF NORTH BENGAL

BCA Honours 2nd Semester Examination, 2021

CC4-BACHELOR OF COMPUTER APPLICATION (23)

COMPUTER SYSTEM ARCHITECTURE

Full Marks: 40

ASSIGNMENT

The figures in the margin indicate full marks.

Answer any *two* of the following assignments   20×2 = 40

1. (a)	Discuss the design of a 4-bit Synchronous Counter and state its advantage over a Ripple Counter.	10
(b)	Discuss the design of a 4-bit register having both serial and parallel loading facilities.	10
2. (a)	Discuss the representation of binary numbers using sign-magnitude, 1's complement and 2's complement methods and compare their merits/demerits.	12
(b)	Draw the flowchart of any algorithm for multiplying two binary numbers.	8
3. (a)	Discuss the design of a hardwired control unit assuming your own instruction set.	10
(b)	Describe the various cycles (exclude interrupt cycle) involved in instruction execution with the help of control flow diagram.	10
4. (a)	Describe the structure of a micro-programmed control unit with the help of a block diagram explaining the function of each block.	10
(b)	Discuss the process of address sequencing (next address generation) in a micro-programmed control unit with the help of a flow diagram.	10

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