



'সমানো মন্ত্র: সমিতি: সমানী'

UNIVERSITY OF NORTH BENGAL
BCA Honours 2nd Semester Examination, 2022

CC4-BACHELOR OF COMPUTER APPLICATION (23)

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.
All symbols are of usual significance.*

1. Answer any **five** questions: 1×5 = 5
 - (a) What are basic logic gates?
 - (b) Define a flip-flop.
 - (c) Write down two applications of multiplexer.
 - (d) Convert $(2022)_{10}$ into its equivalent binary number.
 - (e) What are the flag registers?
 - (f) What do you mean by addressing mode?
 - (g) Define Cache memory.
 - (h) Add $(11110111)_2$ with $(10011111)_2$.

2. Answer any **three** questions: 5×3 = 15
 - (a) Discuss working principle of a 4×1 multiplexer with proper diagram. 5
 - (b) Discuss any three input device of a computer system. 5
 - (c) Differentiate RISC and CISC architecture. 5
 - (d) Write a short note on instruction format. 5
 - (e) Draw and discuss bus interconnection design of a basic computer. 5

3. Answer any **two** questions: 10×2 = 20
 - (a) Discuss J-K flip-flop with proper diagram and truth table. What do you mean by Race-around condition? 8+2
 - (b) Discuss different phases of instruction cycle. 10
 - (c) Discuss any two cache memory mapping technique. 5+5
 - (d) Describe arithmetic and logical operations with examples. (Five operations from each type) 5+5

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