'समानो मन्त्रः समितिः समानी'

UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 1st Semester Examination, 2023

CC2-COMPUTER SCIENCE (13)

COMPUTER SYSTEM ARCHITECTURE

Time Allotted: 2 Hours | Full Marks: 40

The figures in the margin indicate full marks.

Answer any *five* questions 1×5 = 5

1. Find Hexadecimal form of $(10101001)_2$
2. What are the Fundamental Logic gates?
3. Write the Truth table of a two-input NAND gate.
4. What do you understand by multiplexer?
5. Define virtual memory.
6. Write the De-Morgan's Laws.
7. Write the full forms of CMOS and PROM.
8. Define the term flip-flop.

Answer any *three* questions 5×3 = 15

9. Write a short note on memory hierarchy.
10. Write a note on Program Interrupt.
11. Explain Full-adder with suitable diagram.
12. Write a note on S-R flip-flop.
13. Find the binary, octal and hexadecimal equivalent of 5094.

Answer any *two* questions 10×2 = 20

14. Explain in detail the FIFO and LRU page replacement algorithms.
15. Explain direct and indirect addressing of instruction code with suitable diagram.
16. Discuss weighted code with example. Explain excess-3 code and justify whether it is weighted code or not.
17. Discuss different types of Storage Technology like Semiconductor memory, Magnetic memory and Optical memory.

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