

**B.M.S. COLLEGE FOR WOMEN, AUTONOMOUS**  
**BENGALURU – 560004**  
**SEMESTER END EXAMINATION – SEPTEMBER 2023**

**B.C.A – 2<sup>nd</sup> Semester**

**COMPUTER ARCHITECTURE**  
**(NEP Scheme 2021-22 onwards F+R)**

**Course code: BCA2DSC04**  
**Duration: 2 ½ Hours**

**QP Code:2032**  
**Max. Marks: 60**

**Instruction: Answer all the sections.**

**PART-A**

**I. Answer any TEN questions. Each question carries TWO marks. (2X10=20)**

1. Convert 56210 into Binary.
2. Write the logic symbol, expression and truth table of NAND gate.
3. State Demorgan's theorem.
4. Define opcode and operand.
5. Write IEN instruction.
6. Define virtual memory.
7. Define Flip Flop.
8. What is the format of any instruction?
9. What is PSW?
10. Define RAID.
11. What is Memory Management System?
12. Define Hit Ratio in cache memory.

**PART-B**

**II. Answer any SIX questions. Each question carries FIVE marks. (5X6=30)**

13. Simplify  $F(A,B, C, D) = \sum m(1, 5, 6, 12, 13, 15)$  and draw a circuit diagram.
14. Design Half adder and Full adder circuits with logical gates.
15. Explain memory reference instructions.
16. Explain j-k Flipflop explain with truth table and diagram.
17. Explain I/O Configuration with diagram.
18. Explain SISO shift register in detail.
19. Explain different registers in basic computer.
20. Write about RMA and ROM.

**PART-C**

**III. Answer any ONE question. Each question carries TEN marks. (10X1=10)**

21. Explain different types of addressing modes with examples.
22. Explain DMA with its block diagram and explain its working.
23. Explain Computer instruction cycle phases with flowchart.

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