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I Semester M.C.A. Degree Examination May/June - 2025**COMPUTER APPLICATIONS****Computer Organization and Architecture****(CBCS - 2020-21 Scheme)****Paper : 1MCA3****Time : 3 Hours****Maximum Marks : 70****Instructions to Candidates :****Answer All Sections.****SECTION - A**Answer any **Five** questions. Each question carries **6** marks.**(5×6=30)**

1. Convert $(4568,105)_{10}$ to Binary, Octal, Hexa decimal.
2. Explain the Full adder with Logic circuit diagram using NAND gate.
3. Explain Register Reference Instructions.
4. Explain the Different Addressing Modes.
5. Explain the bus Line with three state buffer with diagram.
6. Write a note on Shift micro operations.
7. Define RAID. Discuss Advantages of RAID technology for secondary memory.
8. Explain memory hierarchy in details.

SECTION - BAnswer any **Four** questions. Each question carries **10** marks.**(4×10=40)**

9. Draw the Block diagram of 3 to 8 Line Decoder and Explain.
 10. Draw the flowchart for instruction cycle with neat diagram and Explain.
 11. Draw and explain the block diagram of DMA controller.
 12. a) Write a note on Distributed memory MIMD Architecture
b) Explain the types of RAM
 13. a) Explain the K-map simplification $F(A, B, C, D) = \sum(0, 2, 5, 7, 8, 10, 13, 15)$
b) Discuss CISC vs RISC
 14. a) Define ILP. Discuss techniques used to overcome from Data Hazards
b) Explain the Interprocessor Communication.
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