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**Question Paper Code: 39403**

B.E. / B.Tech. DEGREE EXAMINATION, AUGUST 2021

Elective

Electronics and Communication Engineering

01UEC903 - COMPUTER ARCHITECTURE AND ORGANIZATION

(Regulation 2013)

Duration: 1:45 hour

Maximum: 50 Marks

PART A - (10 x 2 = 20 Marks)

**(Answer any ten of the following questions)**

1. Examine the operations involved in the execution of ADD R1,R0 instruction.
2. Differentiate direct and indirect addressing mode.
3. What is a ripple carry adder?
4. Discuss the principle behind the Booth's multiplier.
5. What is microprogramming?
6. What is Write-After-Write (WAW) hazard?
7. Compare sequential access and random access memories.
8. State the principles of memory interleaving.
9. Mention the significance of buses and its types in computer architecture
10. What is memory mapped I/O?
11. Discuss the stored program concept.
12. List out the register level circuit components.
13. Point out the advantages of Co-processors.

14. Compare spatial expansion and temporal expansion.
15. What is microprogramming?

PART – B (3 x 10= 30 Marks)

**(Answer any three of the following questions)**

16. Explain zero, one, two and three addressing instructions with example. (10)
17. With a neat block diagram explain in detail about CPU-coprocessor interfacing. (10)
18. Explain the design of micro-programmed control unit for the two's complement multiplier with a diagram. (10)
19. Design the following RAM using  $N \times w$  bit IC RAM.
  - (1)  $N \times 4w$  bit RAM
  - (2)  $4N \times w$  bit RAM (10)
20. With a diagram explain static and dynamic redundancy for designing fault tolerant system. (10)