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**Question Paper Code: 49403**

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

Elective

Electronics and Communication Engineering

14UEC903 - COMPUTER ARCHITECTURE AND ORGANIZATION

(Regulation 2014)

Duration: 1:45 hour

Maximum: 50 Marks

PART A - (10 x 2 = 20 Marks)

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

1. Write the CPU performance equation.
2. What is coprocessor and what are the functions performed by the coprocessor?
3. What is an instruction pipeline?
4. Explain virtual memory.
5. What is processor time of a program?
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. With examples explain the different types of instruction format. (10)
17. With a neat block diagram explain in detail about CPU-coprocessor interfacing. (10)
18. Explain the design of micro programmed control unit with relevant 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. Explain the IOB organization and communication between CPU and IOB. (10)