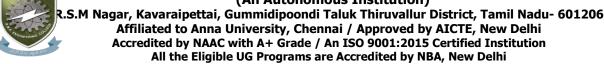
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20CS401- COMPUTER ARCHITECTURE

REVISION TEST Part A [40*2=80] Answer any 40 questions

- 1. Write the basic functional units of computer
- 2. State the role of PC?
- 3. Explain how CPU execution time for a program is calculated?
- 4. Define Little Endian and Big Endian arrangement.
- 5. Define throughput and response time.
- 6. Define bus? What are the different buses in a CPU?
- 7. List the different types of addressing modes available.
- 8. Define Computer Architecture.
- 9. Discuss Stored Program Concept.
- 10. Solve 1 0 1 1 (-5) + 1 1 1 0 (-2)
- 11. List the overflow conditions for addition and subtraction.
- 12. Define EPC.
- 13. Represent the IEEE 754 representation of single precision floating point number.
- 14. Represent the IEEE 754 representation of double precision floating point number.
- 15. Write the rules for add operation on floating point numbers?
- 16. Write the rules for sub operation on floating point numbers?
- 17. What is normalized floating point number? Give example.
- 18. Write the algorithm for restoring division.
- 19. Write the algorithm for non-restoring division.
- 20. What is guard bit? List the ways to truncate the guard bits.
- 21. What is mean by branch history table / branch prediction / branch target buffer?
- 22. What is pipeline stall?
- 23. List the five stages in the instruction pipelining.
- 24. What are Hazards? List the types of hazards.
- 25. What is meant by hardwired control?
- 26. How data hazard can be prevented in pipelining?
- 27. Draw Two state diagram for dynamic branch prediction?
- 28. Draw Four state diagram for dynamic branch prediction?
- 29. What is superscalar processor?
- 30. Define pipelining.
- 31. What is temporal locality?
- 32. What is spatial locality?
- 33. Draw memory hierarchy
- 34. Define write-through scheme.
- 35. Define write-back scheme.
- 36. What is set-associative cache mapping?
- 37. What is associative cache mapping?
- 38. What is direct cache mapping?
- 39. What is the use of TLB?
- 40. Define cycle stealing.

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- 41. What is flynn's classification?
- 42. Define Cluster.
- 43. What is UMA?
- 44. What is NUMA?
- 45. What is CC-NUMA?
- 46. Define SMP.
- 47. What is cache coherence problem.
- 48. What is MESI Protocol?
- 49. Give the taxonomy of parallel processing architecture.
- 50. What are the benefits of Clustering?

PART B

Answer All questions [50 marks]

1.	Explain Flynn's classification in detail.	(11)
2.	Explain SMP in detail	(13)
3.	Explain Cache coherence in detail.	(13)
4.	Explain Cluster with neat architecture diagram.	(13)