UNIT I – Basic Structure of Computer

Functional units – Basic operational concepts – Bus Structures – Performance – Memory locations and addresses – Memory operations – Instruction and Instruction sequencing — Addressing modes – Assembly language – Case study: RISC and CISC Architecture.

PART A

1. Define Computer Architecture.
2. What are the five classic components of a computer?
3. What are the addressing modes?
4. State the need for indirect addressing mode. Give an example.
5. What is an instruction register?
6. Give the formula for CPU execution time for a program.
7. How to represent instruction in a computer system?
8. Distinguish between auto increment and auto decrement addressing mode.
9. What is instruction set architecture?
10. List the various elements of instruction.
11. What are the functions of control unit?
12. What is a Bus? List out its functional groups.
13. What is Bus arbitration?
14. Define memory space.
15. What is straight line sequencing?
16. Define branching.
17. What are conditional codes?
18. What do you mean by response time?
19. List various instruction formats with example.
20. Define throughput and throughput rate.
21. Write a program that can evaluate the expression
    A*B+C*D in a single- accumulator processor. Assume that the processor has load, store, multiply and add instruction and that all value fit in the accumulator.

22. Given a binary pattern in some memory location, is it possible to tell whether this pattern represents a machine instruction or a number?
23. Difference between little- endian and big-endian assignments.
24. What are clock and clock cycles?
25. Differentiate super computer and mainframe computer.
26. Differentiate between minicomputer and microcomputer
27. What is program counter?
28. What is RISC and CISC?
29. List out the methods used to improve system performance.
30. Define addressing modes and its various types.
31. Distinguish between auto increment and auto decrement addressing mode?
32. Write the CPU performance equation. (
33. If computer A runs a program in 10 seconds, and computer B runs the same program in 15 seconds, how much faster is A over B.
34. Write an example for immediate operand.
35. Define CPU execution time and list the types of CPU execution time