UNIT-1

1) Explain the data path of Von Neumann Architecture. What are its drawbacks?
2) Explain bus interconnection with MAR, MBR, PC, IR, PCI registers.
3) What is an instruction? For example explain three, two, one, zero address instructions.
4) Explain Fetch, Decode and Execute Cycle with example.
5) Justify the statement "Stack computer consists of an operation code only with no address field".
6) Explain indirect addressing mode and how the effective address is calculated in this case.
7) What is the difference between direct and indirect address instruction? How many references to memory are needed for each type of instruction to be an operand into a processor register?
8) Explain the Memory-reference instructions and Input-output instructions with examples.
9) What are the two instructions needed in the basic computer in order to set E flip-flop to 1?
10) What is the main difference between implied and immediate modes of addressing?
11) Describe the interconnection structure by indicating input & output features for memory, I/O module & CPU.
12) Write two lines about any four major registers of CPU?
13) Explain register addressing, register indirect addressing, relative addressing & indexed addressing modes with an example.

14) What is a CPU organization? Explain the Single Accumulator with a proper diagram.

15) Explain General Register and Stack organization with a proper diagram.

UNIT-2

1) Draw a block diagram for the hardware implementation for signed magnitude addition and subtraction?
2) Explain the flow chart for hardware implementation for addition and subtraction?
3) Draw the block diagram for hardware implementation for the Booth's multiplication algorithm?
4) Apply Booth multiplication algorithm for multiplying -9 X -13?
5) Draw a flowchart for adding and subtracting two fixed-point binary numbers where negative numbers are signed 1's complement presentation.
6) Explain the representation of Signed- Magnitude Data.
7) Write steps of addition and subtraction of signed-magnitude data with suitable examples.
8) Show that there can be no mantissa overflow after a multiplication operation.
9) Explain logical shift operation with example.
10) Explain arithmetic shift operation with example.
11) Differentiate between signed magnitude & 2's complements representation for negative numbers?
12) Draw & explain block diagram for hardware implementation of addition & subtraction using 2's complements representation.
13) Draw & explain flowchart for hardware algorithm of signed magnitude addition & subtraction.
14) Draw and Explain the carry-lookahead generator hardware circuit.
15) Explain the concept of carry-save Multiplication.
16) What is the Difference between Carry-save Addition(CSA) and Ripple carry Addition(RCA)?