Department: Electronics and Communication Engineering

Course Code:24BEPHY105

Course Name: Computer Organization and Architecture

Module1

1. Define computer architecture and organization.

2. convert Decimal to Binary: 236,379

3. Find the subtraction of 72532 and 13250 using 10's complement.

4. Subtract the x=1010100 and y=1000011 using 2's complement.

5. Explain the floating-point representation with an example.

6. Convert from binary to decimal: 101111, 0111100

7. Convert from Octal to decimal: 472,135

8. Convert from decimal to hexadecimal: 3452,6429

9. Convert from BCD to hexadecimal: 3452,6429

10. Divide the 256 by 8 using binary division algorithm.

11. Explain the floating-point and fixed-point representation in digital computers.

12. Represent the given decimal IEEE 754 floating point notation: 263.3

13. What are the main components of a digital computer as depicted in its block diagram

14. Explain the booth multiplication algorithm with flowchart.

15. Explain the block diagram of BCD adder.

16. Explain the Addition and subtraction with signed magnitude data with Hardware implementations.

Module2

1. What is an Input-Output interface? Explain its role in a computer system.

2. Differentiate isolated and memory mapped I/O

3. List the main components of an Input-Output interface and describe their functions.

4. How does the Input-Output interface help in communication between the CPU and external devices?

5. What is Asynchronous Data Transfer? How does the strobe control mechanism work in asynchronous data transfer?

6. Differentiate between Programmed I/O and Interrupt-initiated I/O.

7. Differentiate between serial transmission and parallel transmission?

8. Differentiate between synchronous and asynchronous transmission?

9. List the different modes of data transfer? Explain any one method?

10. What is Priority Interrupt in the context of I/O operations? How does a Daisy Chain mechanism work to manage priority?

11. What is Direct Memory Access (DMA)? Describe the operation of the DMA controller in a system.

12. Explain the concept of Memory Hierarchy and List the levels of the hierarchy from fastest to slowest.

13. What are Magnetic Disks and Magnetic Tapes? Discuss their roles as auxiliary memory in computer systems.

14. Define Hit ratio, mapping?