**Unit 2: Input & Output Organization**

1. What is role of DATAIN & DATAOUT Instruction?

2. Draw & Explain IO interface for input device.

3. Explain basic idea of use of registers in an IO device.

4. What is DMA? Explain role of it.

5. Explain the role of DMA controller.

6. Differentiate between synchronous bus & asynchronous bus.

7. Explain interface circuits.

8. Explain working of parallel port in interface circuits.

9. Explain working of serial port in interface circuits.

10. What are different standard IO Interfaces?

11. What is SCSI? Explain in detail.

**Unit 3: Arithmetic**

1. What is the difference between signed & unsigned binary numbers? Give example.

2. Represent binary, signed integer, 1’s complement & 2’s complement forms of numbers ranging from +7 to -7.

3. How addition & subtraction of binary numbers is done using 2’s complement?

4. Draw & explain an n-bit ripple carry adder.

5. Draw & explain carry Look a head adder.

6. Explain algorithm for unsigned binary multiplication.

7. Explain Booth’s algorithm for unsigned binary multiplication.

8. Explain technique of bit pair recording of multipliers for fast multiplication.

9. Explain technique of carry save addition of summands for fast multiplication.

10. Explain restoring division algorithm with example.

11. Explain non-restoring division algorithm with example.

12. What are floating point numbers? Explain IEEE 754 floating point number format.

13. What is normalization & biasing?

14. Convert following decimals to IEEE 754 Floating Point Format.

1. 0.15625

2. -2

3. 0

4. -0

5. 3.1415927410

6. -99.999

7. 10.112

8. 111.111

9. -543.214