



***Ahmedabad Institute of Technology***  
***CE & IT Department***

**Computer Organization & Architecture**  
**(3140707)**

**Question Bank**

**Year: 2022-23**

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1. Construct a 4-bit adder-subtractor circuit.
2. Represent (8620) <sub>10</sub> in (1) binary (2) Excess-3 code and (3) 2421 code.
3. How negative integer number represented in memory? Explain with suitable example. Explain floating point representation.
4. Define RTL. Explain how register transfer takes place in basic computer system.
5. What is instruction cycle? Draw Flowchart for Instruction cycle and explain it.
6. Construct diagram of common bus system of four 4-bits registers with diagram.
7. List out names of eight main registers of basic computer with their symbolic name and purpose.
8. Explain following terms: 1) Micro-Operation 2) Micro-instruction 3) Pseudo instruction.
9. List and explain Memory reference instructions in detail
10. Draw a diagram of 4-bit binary incrementer and explain it briefly.
11. Write a truth table of three state buffer and explain high impedance state in it with logic symbol diagram.
12. Draw and explain a flowchart of interrupt cycle.
13. Explain Direct and Indirect Addressing.
14. What is the role of sequence counter(SC) in control unit? Interpret its concept with the help of its three inputs using diagram.
15. Interpret the following instructions: INP, ISZ and LDA
16. Describe BUN and BSA memory reference instructions in detail.
17. Draw the flowchart of first pass of the assembler and explain working of the same.

18. Draw and briefly explain flowchart for second pass of assembler.
19. Differentiate assembly language and machine language.
20. Write brief note on subroutine call and return
21. State the differences between hardwired control and micro programmed control.
22. Write assembly level program to swap two numbers.
23. Write an Assembly level program for addition of 50 numbers.
24. Draw and explain flow chart of address sequencing.
25. Explain Design of Control Unit with block diagram.
26. Explain with the help of a diagram the working of a basic computer, which uses Micro Programmed Control.