SARDAR PATEL COLLAGE OF ENGINEERING, BAKROL, ANAND

Subject Name: Computer Organization & Architecture **semester: 4th**

Subject Code: 2140707 **Branches: I.T.**

Assignment – 1

Given Date: 12/02/2020 ***Last Date: 19/02/2020**

1. Multiply the (-8) with (+12) using booth's algorithm.
2. Explain register transfer language in detail.
3. What is high impedance state in three state buffers? Explain three state gates in detail. Write a truth table of three state buffer.
4. Explain design of ALU.
5. Explain common bus system using multiplexer.
6. Draw basic computer architecture.
7. Explain in detail instruction cycle and instruction codes.
8. Draw a diagram of 4-bit binary incrementer and explain it briefly.
9. List and explain any seven addressing mode.
10. Draw and explain a flowchart of interrupt cycle.
11. Explain shift micro-operations with necessary diagrams.
12. What is role of first pass assembler? Explain assembler's second pass with flowchart.
13. What is overlapped register window in RISC?
14. Draw and explain flow chart of address sequencing.
15. Explain Design of Control Unit with block diagram.
16. Explain the following instructions: CIL, SNA, INP.

Assignment-2

Given Date: 25/02/2020 ***Last Date: 12/03/2020**

1. Draw and explain a flowchart of interrupt cycle.
2. Write micro-instruction format and give one example.
3. Briefly explain any four characteristics of RISC.
4. What is role of first pass assembler? Explain assembler's second pass with flowchart.
5. Explain LDA and STA instructions with its micro-operations with relevant D and T notations
6. In zero-address instructions format, how data from memory is accessed? Explain with example.
7. Draw flowchart for instruction cycle and explain it.
8. Write an assembly language program to multiply two positive numbers.
9. Explain arithmetic shift left operation. Describe how overflow is handled.
10. Explain three-address, two-address and one-address instructions with example.
11. Explain instructions:- BSA, ISZ, SZE
12. What is register stack? Explain Push operation.
13. Explain BCD adder with diagram.
14. Represent (8620)10 in (1) binary (2) Excess-3 code
15. Explain 4-bit adder-subtractor with diagram.
16. Explain four types of instruction formats.
17. Draw the block diagram of 4-bit arithmetic circuit and explain it in detail.
18. Write brief note on subroutine call and return
19. How negative integer number represented in me
    suitable example.
20. Explain floating point representation.
21. State the differences between register stack and memory stack.
22. Define the term accumulator.

***Note: Consider the last date as final deadline to the assignment. After the last date assignment will not be accepted in any case.**