Sanjivani College of Engineering
Department of Computer Engineering
SPOS Tutorial -1

1. What are assembler directives? What is the purpose of LTORG directive and EQU directive? Explain with example

2. How are the literal handled in an assembler? Show all the data structures required for processing of literals. Give appropriate examples

3. Give format of different databases that are used for design of Pass-I of two pass assembler

4. Write an algorithm for Pass-I of two pass assembler and explain with suitable example

5. Write an algorithm for Pass-II of two pass assembler and explain with suitable example

6. For the following assembly code generate Literal table, Symbol table, Pool table, intermediate code. Assume size of instruction is equal to one byte.

```
        START 200
        MOVER AREG, A
L:      MOVEM BREG, =' 2'
        ADD BREG,= '2'
        ADD CREG, = '3'
        ORIGIN L + 20
        LTORG
        MOVER AREG, C
C       EQU L + 15
        ADD AREG, = '2'
        ADD BREG, = '5'
A       DS 5
        END
```

7. What is the difference in function between the BALR and USING instruction?
8. What happens to each at assembly time? At execution time? For the following program
    a) Show the symbol table at the end of Pass-I
    b) Show the literal table at the end of Pass-I
    c) Show the changes in the base register table during Pass-II
    d) Show the generated "machine" code from Pass-II

```
SIMPLE START
        BALR15,0
        USING*,15
LOOP L R1,TWO
        A R1,TWO
        ST R1,FOUR
        CLI FOUR+3,4
        BNE LOOP
        BR 1 4
R1      EQU 1
```

```
TWO    DC F'2'
FOUR   DS F’4’
       END
```

9. Draw a flow chart for Pass-I of two pass assembler design and explain

10. Draw a flow chart for Pass-II of two pass assembler design and explain

Prepared by
Mr.N.G.Pardeshi
Subject Teacher

Approved by
Dr.D.B.Kshirsagar
HOD