**Title: Macro Processor**

# Problem Statement:

### Study assignment for macro processor. (consider all aspects of macro processor)

Objective:

To study basic functioning of Macro Processor.

To study working of nested macro.

Theory:

What is Macro Processor :

Minimum 5 Lines. (structure of macro definition , call with example)

Parameter passing methods in Macro processor

what is pass structure of Macro Processor

Minimum 5 Lines.

Data structure needed for Macro Processor:

(in detail with description)

ADVANCED MACRO FACILITIES

What is nested Macro Call

Definition within Definition

Calll within definition with example

Recursive Macrol

Need of stack frame

**Show the contents of various MACRO definition table and Macro Name table**

**and Argument list array , stack frame wherever needed, Expanded Source file.**

Example 1

* + 1. READ A
    2. READ B
    3. MACRO
    4. ADD2 X,Y,Z
    5. LOAD X
    6. ADD Y
    7. STORE Z
    8. MEND
    9. MACRO
    10. MULT L,X,Y,Z
    11. LOAD @0
    12. STORE Z
    13. L ADD2 X,Z,Z
    14. LOAD Y
    15. SUB @1
    16. STORE Y
    17. JPOSE L
    18. MEND
    19. MULT L1,A,B,C
    20. ENDP
    21. A DEFW
    22. B DEFW
    23. C DEFW
    24. END

Example 2

START

SR 2,2

L 1,DATA1

MACRO

ADD\_M &ARG1

L 1, &ARG1

A 1, =F’10’

SR 3,3

ST 1, &ARG1

MEND

AR 2,2

MACRO

ADD\_S &A1, &A2,&A3

ADD\_M &A1

ADD\_M &A2

ADD\_M &A3

MEND

ADD\_M DATA1

ADD\_S X1, X2, X3

ADD\_S X2, X1, X3

DATA1 DC F’20’

X1 DC F’25’

X2 DC F’30’

X3 DC F’35’

END

**Example 3**

MACRO

MAC1

MOVER AREG, M

ADD BREG, M

MOVEM CREG, M

MEND

MACRO

EVAL &X,&Y,&Z

MOVER AREG, &X

SUB AREG, &Y

ADD AREG, &Z

MOVER AREG, &Z

MEND

MACRO

CALC &X,&Y,&OP=MULT,&LAB=

&LAB MOVER AREG, &X

&OP AREG, &Y

MOVEM AREG, &X

MEND

START

MOVEM AREG, B

EVAL A, B, C

ADD AREG, N

MOVEM AREG, N

CALC P, Q, LAB=LOOP:

MOVEM AREG, N

MAC1

CALC P,Q,OP=DIV, LAB=NEXT

M DS 1

A DS 5

B DS 1 C DS 1 N DS 1

P DS 1 Q DS 1

END