Mumbai Education Trust's

INSTITUTE OF ENGINEERING, BKC, NASHIK.

DEPARTMENT OF COMPUTER ENGINEERING
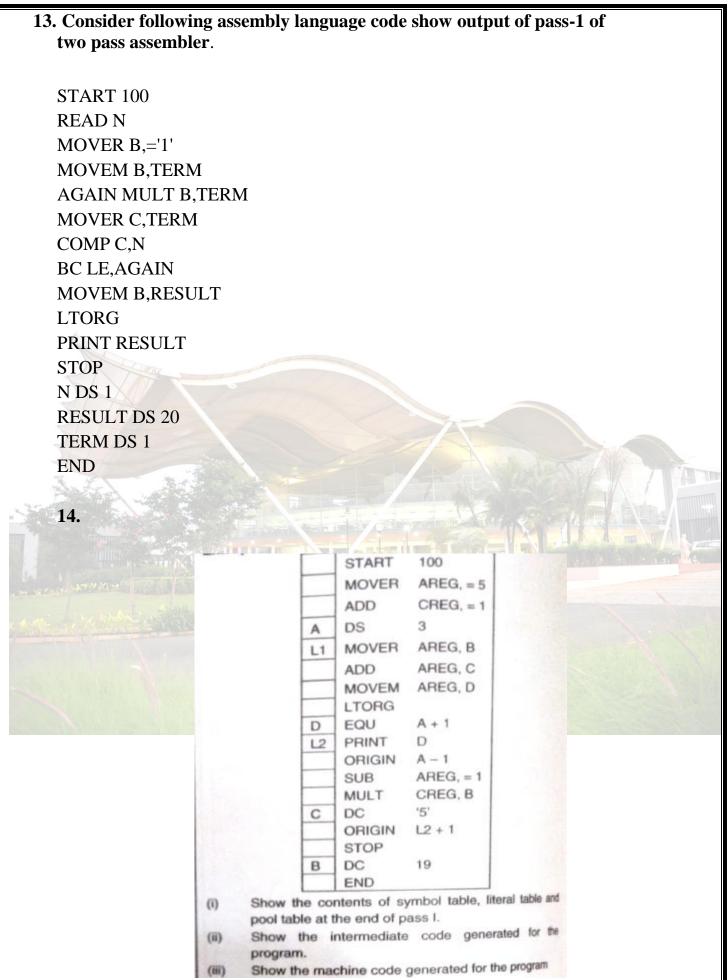
Subject : SPOS	**ASSIGNMENT NO – 01**	**Unit : I**

1. **Define system programming** & explain its **all tool** in details.
   i) Assembler   ii) Loader   iii) Editor   iv) Linker v) Debugger etc.

2. What is the **need of symbol table (ST) and literal table (LT)** in two pass assembler?

   Explain fields of ST and LT with suitable example.

3. Explain the **different assembly language statement** with examples.

4. Define **Assembler Directive**. Explain **ORIGIN, EQU & LTORG** with example.

5. What is **forward reference** ? How it is handled in single pass assembler ?

6. Explain **Macro** and its advantages & how they are different from function.

7. Explain the **machine structure** in details. (structure of CPU)

8. Difference between **Literal & Immediate operand** (Constant). How assembler handle

   them? Give example.

9. Enlist **different types of error handled by PASS- I & II assembler.**

10. Draw and explain **Algorithm & flowchart of Pass-2 of two pass assembler.**

11. Draw and explain **Algorithm & flowchart of Pass-I of two pass assembler**.

12. What are the **databases(Data Structure) used by pass-1 and pass-2** of assembler.

    Explain them with their format.

13. Consider following assembly language code show output of pass-1 of two pass assembler.

```
START 100
READ N
MOVER B,='1'
MOVEM B,TERM
AGAIN MULT B,TERM
MOVER C,TERM
COMP C,N
BC LE,AGAIN
MOVEM B,RESULT
LTORG
PRINT RESULT
STOP
N DS 1
RESULT DS 20
TERM DS 1
END
```

14.

	START	100
	MOVER	AREG, = 5
	ADD	CREG, = 1
A	DS	3
L1	MOVER	AREG, B
	ADD	AREG, C
	MOVEM	AREG, D
	LTORG	
D	EQU	A + 1
L2	PRINT	D
	ORIGIN	A − 1
	SUB	AREG, = 1
	MULT	CREG, B
C	DC	'5'
	ORIGIN	L2 + 1
	STOP	
B	DC	19
	END	

(i)   Show the contents of symbol table, literal table and pool table at the end of pass I.

(ii) Show the intermediate code generated for the program.

(iii) Show the machine code generated for the program