Total No. of Questions : 6] **SEAT No. :**

P45 **[Total No. of Pages : 2**

TE/INSEM/APR-50

T.E. (Computer Engineering) (Semester - II)

310251 : SYSTEMS PROGRAMMING AND OPERATING SYSTEM (SP & OS)

(2015 Pattern)

Time : 1 Hour] ***[Max. Marks : 30***

Instructions to the candidates:

1) ***Attempt questions Q.1 or Q.2, Q.3 or Q.4, Q5. or Q.6.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Assume suitable data, if necessary.***

Q1) a) Define following system software components with suitable diagram. **[5]**

i) Compiler ii) Loader

iii) Editor iv) Linker

v) Debugger

b) Consider following Assembly code and show output of pass-1 and pass-2 of two pass assembler with entries in MOT, POT, ST, LT and BT. **[5]**

```
PROG    START   100
        USING   *,15
        SR      4,4
        L       1, ONE
        A       1,=F'2'
        ST      1,RES
RES     DS      2F
ONE     DC      F'1'
        END
```

OR

P.T.O.

Q2) a) Draw and explain flowchart of Pass-2 of two pass assembler. **[5]**

b) What are the databases used by pass-1 and pass-2 of assembler. Explain them with their format. **[5]**

Q3) a) Differentiate between Static libraries and Dynamic Libraries? **[4]**

b) Draw and explain flowchart of single pass macro processor. **[6]**

OR

Q4) a) Explain working of "General Loading Scheme" with advantages and disadvantages. **[5]**

b) What are the types of arguments used with macros? Explain with suitable example. **[5]**

Q5) a) Write LEX program to recognize keywords, integer numbers, floating point numbers, variables and comments in "C" program? **[5]**

b) What are the roles of Lexical analyzer? Explain with suitable diagram. **[5]**

OR

Q6) a) Justify need of YACC? Explain working of YACC with suitable diagram and example? **[5]**

b) What is interpreter? Explain use and components of interpreter? **[5]**

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