

Total No. of Questions : 6]

SEAT No. :

P45

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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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