

Total No. of Questions : 6]

SEAT No. :

P539

[Total No. of Pages : 2

APR - 18/TE/Insem. - 141

T.E. (Computer Engineering)

SYSTEMS PROGRAMMING AND OPERATING SYSTEM

(2015 Course) (Semester - II) (310251)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) Answer Q1 or Q2, Q3 or Q4, Q5 or Q6.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data, if necessary.

Q1) a) Differentiate between literal and immediate operand. How assembler handles them? Give examples. [6]

b) Define Assembler Directive. Explain ORIGIN, EQU & LTORG with example. [4]

OR

Q2) a) Consider following Assembly code and show output of pass-1 of two pass assembler with entries in MOT, POT, ST, LT and BT. [5]

PROG START 50

USING PROG+2, 15

L 1, FIVE

A 1, = F '2'

LTORG

ST 1, RES

FIVE DC F '4'

RES DS IF

END

b) Discuss with example what is forward reference? How is it handled in single pass assembler? [5]

P.T.O.

**Q3) a)** Define Macro. What are the advantages of macro facility? How are macros different from functions? [6]

b) What is the need of DLL? Differentiate between How Dynamic and static linking? [4]

OR

**Q4) a)** What are the types of loaders? Explain compile and go loader scheme with advantages and disadvantages using suitable diagram. [6]

b) Comment on the statement “Programs with macros require more space and less time at runtime than programs with functions”. [2]

c) Discuss four different functions of loader. [2]

**Q5) a)** What is interpreter? Explain various components of interpreter? [4]

b) Consider input “d = a + b \* 2;” and show the output of each phase of compiler with suitable diagram? [6]

OR

**Q6) a)** Write regular expressions to recognize following : [4]

i) Signed and unsigned integer numbers.

ii) Identifiers.

iii) Few Keyword in “C” program.

iv) Relational Operators.

b) What is LEX? Explain working of LEX with suitable diagram? [4]

c) What is Syntax Error? Give suitable example? [2]

