

T.E - sem VI (old)  
Computer

26-5-17

Q. P. Code : 580805

(3 Hours)

[Total Marks : 100]

- N.B.:(1) Question No. 1 is compulsory.  
 (2) Attempt any **FOUR** questions from remaining questions.  
 (3) Assume suitable data if necessary.

1. Solve any **Four** from the following: 20
  - (a) What is ambiguous grammar? Give suitable example.
  - (b) How forward reference is handled by one pass and two pass assembler?
  - (c) Explain macro definition with an example.
  - (d) Discuss the phases of compiler with an example.
  - (e) Explain the functions of loader.
2. (a) Explain with suitable databases, how macro call is processed by two pass macro processor. 10  
 (b) Construct an NFA for the language with all strings starting with 0 and ending with 01. Convert this NFA into its equivalent DFA. 10
3. (a) Explain with example, syntax directed translation. 10  
 (b) Explain the various forms of intermediate code used by compiler. 10
4. (a) Construct the LL(1) parsing table for the following grammar:- 10

$$E \rightarrow T X$$

$$T \rightarrow ( E ) | \text{int } Y$$

$$X \rightarrow + E | \epsilon$$

$$Y \rightarrow * T | \epsilon$$
 (b) Explain the two pass assembler with respect to flowchart and data structures. 10
5. (a) Explain different storage allocation strategies. 10  
 (b) Define code optimization? Explain block optimization techniques with example. 10
6. (a) Explain activation record with the help of diagram. 10  
 (b) Explain the working of Direct Linking Loader in detail. 10
7. Write short notes on (**Any Two**): 20
  - (a) Recursive-descent parser
  - (b) Macro assembler
  - (c) LEX and YACC
  - (d) Role of finite automata in compiler theory