

(3 Hours)

[Total Marks : 80

- N.B. :** (1) Question No. 1 is compulsory.
(2) Attempt any **three** from the remaining questions.
(3) Assume suitable **data** if necessary.
(4) **Figures** to the **right** indicate **full** marks.

1. (a) What is Handle pruning? **5**
(b) What is role of finite automata in compiler theory? **5**
(c) What are different type of attributes in SDD? Explain with examples. **5**
(d) Backpatching with example. **5**
2. (a) Explain two pass macro processor with flowchart and databases. **10**
(b) Explain various loop optimization techniques with example. **10**
3. (a) a) Construct SLR parsing table for following grammar. Show how parsing actions are done for the input string () () \$. Show stacks content , i/p buffer, action.
 $S \rightarrow (S)S$
 $S \rightarrow \epsilon$ **12**
(b) What are various databases used in two pass assembler design. Explain with example. **8**
4. (a) Discuss various intermediate code forms in detail. **10**
(b) What is Loader ? Explain functions of loader with examples. **10**
5. (a) For the given grammar below, construct operator precedence relations matrix, assuming *, + are binary operators and id as terminal symbol and E as non terminal symbol. **10**
 $E \rightarrow E + E$
 $E \rightarrow E * E$
 $E \rightarrow id$
Apply operator precedence parsing algorithm to obtain skeletal syntax tree for the statement
 $id + id * id$
(b) Explain Run time organization in detail. **10**
6. Write short notes.
(a) LEX and YACC **5**
(b) Design of an Editor **5**
(c) Syntax Directed Translation **5**
(d) Recursive Descent parsing **5**