Exam.Code:0925
Sub. Code: 6865

1079

B.E. (Information Technology)
Seventh Semester
ITE-746: Compiler Design

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Section. Any missing data may be assumed suitably.

x-x-x

1. (a) Differentiate between Shift-Reduce and Operator Precedence Parsers.
   (b) What are the various attributes of a Symbol Table?
   (c) Explain in brief about Syntax errors.
   (d) Differentiate One Pass and Multi Pass Compiler
   (e) List the properties of LR parser.

Section-A

2. (a) Explain different phases of Compiler. Write the output for different phases of compiler for the string id + id × id
   (b) Consider the following Grammar. Find LEADING and TRAILING for the following Grammar.

$E \rightarrow a \mid (T)$

$T \rightarrow T, S \mid S$

3. (a) Differentiate between Top down and Bottom up Parsing methods.
   (b) Derive Left most and Right most Derivation using Top Down and Bottom up Strategy to derive a statement id +(id × id)

$E \rightarrow E+E$

$E \rightarrow E \times E$

$E \rightarrow (E)$

$E \rightarrow id$

P.T.O.

4.(a) What is Syntax Directed Definition? Write the different methods of defining the attributes in a Grammar.

(b) Construct the Transition Diagram for the following Regular Expression

(i) $(ab^*)^*$ (ii) $(a+b)^*abb$

(5,5)

Section- B

5. (a) Explain different issues in Code Generation.

(b) What are the principle sources of optimization? Give the classification of code optimization. (5,5)

6. (a) Write Three Address Code ,Quadruples, triples for the following Expression

$(a \times b) \times (c + d) - (a + c + d)$

(b) What is Symbol Table? Explain the different data structures which are used for Symbol table. (5,5)

7. (a) Define Flow Graph. Explain the process of its construction using an example.

(b) How register allocation and evaluation plays an important role in code generation.

(5,5)

x-x-x