Code :RR320505



Max Marks: 80

III B.Tech II Semester(RR) Supplementary Examinations, April/May 2011 LANGUAGE PROČESSORS (Computer Science & Engineering)

Time: 3 hours

Answer any FIVE questions All questions carry equal marks

- (a) Write regular expressions and NFA for the following patterns. Use auxiliary definitions 1. where convenient.
 - i. The set of words having a,e,i,o,u appearing in that order, although not necessarily consecutively.
 - ii. Comments as in C.
 - (b) What is the difference between pass and a phase?
- (a) Convert the following grammar into LL(1) grammar 2 $R \rightarrow R''|R|RR|R * |R|a|b$
 - (b) What are the advantages and disadvantages of operator precedence parsing.
- (a) What is LR(1) passing. 3.
 - (b) Construct canonical LR parse table for the following grammar $S \rightarrow Aa|bAc|bBa$ $A \rightarrow d$ $B \rightarrow d$
- (a) What is meant by Structural Equivalence of type expressions. Write a function which will 4. test the structural equivalence of two type expressions.
 - (b) Discuss briefly about type conversions. What is Coercion? The Grammar for expression is given below. Write the semantic rules for Coercion from integer to real. $\begin{array}{l} E \rightarrow \text{num} \\ E \rightarrow \text{num} \\ E \rightarrow \text{id} \\ E \rightarrow E_1 \text{ or } \end{array}$ \rightarrow num.num
 - $\rightarrow \operatorname{id}_{\to E_1} \operatorname{op} E_2$
- (a) Write detailed notes on the symbol table mechanism using tree data structure. 5
 - (b) Explain with an example about the symbol table mechanism using hash table data structures.
- (a) What are the applications of DAG. Explain how the following expression can be converted 6. in a DAG $a+b^*(a+b)+c+d$
 - (b) Explain how loop invariant components can be eliminated.
- (a) Efficient code generation requires the knowledge of internal architecture of the target 7. machine. Justify your answer with an example.
 - (b) What are the various addressing mode are available?
 - (c) Give some examples of machine instructions which reduces memory access time.
- 8. (a) Explain all the data structures used for designing the macro preprocessor.
 - (b) Formulate an algorithm for processing Macro Definition.

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