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CS 701

BE VII Semester

Examination December 2012

Compiler Design

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Time : Three Hours

Maximum Marks : 100 *Minimum Pass Marks :35*

Note : 1. Attempt all questions. All questions carry equal marks.
2. Each question have internal choice.

Unit - I

1. a) What do understand by automatic Lexical generater? [10]
   b) Explain various phases of a complier. [10]

OR

2. a) Write a LEX specification file to identify the tokens of the language C. [10]
   b) Construct FA for the regular expressions
   i) $(a+b)^* abb$ ii) $((a^* + b)^* + b^*)^*$ [10]

Unit - II

3. a) Describe the error reporting and recovery schemes in operator precodence porsing? [10]
   b) Explain S-attribute and L-attribute. [10]

OR

4. For the following grammar
   $E \rightarrow E + T / T$
   $T \rightarrow T * F / F$
   $F \rightarrow (E) / id$
   Construct the LR(0) canonical collection and also design the SLR porsing table. [20]

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Unit - III

5. a) Discuss the importance of type equivalence checking. [10]
   b) Discuss the importance of symbol table in Complier Design. How is the symbol table manipolated at various phases of compilation. [10]

OR

6. a) Discuss the following storage - allocation strategies
   i) Stak allocation. ii) Heap allocation [10]
   b) Compare Explicit and Implicit type conversion. [10]

Unit - IV

7. a) Write triples for the expression
   $(a + b) * (c + d) - (a + b + c)$ [10]
   b) Show the annotated porse tree and code generation process for the arthemetic expressions $a + (b - c) + d$. [10]

OR

8. a) Construct the DAG for
   $X = Y * Z$
   $W = P + Y$
   $Y = Y * Z$
   $P = W - X$ [10]
   b) Discuss the factors affecting target code generation. [10]

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Unit - V

9. a) Explain different type of optimization. [10]
   b) What are the common algebric transformations that can be done for improving the intermediate code. [10]

OR

10. a) Explain dead code elimination with example. [10]
    b) What is global data fbw analysis? What is its use in code optimization? [10]