CS 701

BE VII Semester

Examination December 2012

Compiler Design

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]

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]