Roll No. ..... Total Pages : 02

BT-7/D-13 **8722**

COMPILER DESIGN

IT-455

Time : Three Hours] [Maximum Marks : 75

Note : Attempt any *Five* questions. All questions carry equal marks.

1. (a) Explain in short lexical analysis and intermediate code generation phases in compiler construction. 7
   (b) Describe briefly the terms token, symbol table and grammar. 8

2. (a) What is a Recursive Descent Parser ? Give an example. 9
   (b) What are ε-transitions and ε-closures ? 6

3. What are SLR and LALR grammars ? Give example of a LALR (1) grammar that is not in SLR. 15

4. (a) What is Minimum distance matching ? How to handle shift-reduce errors ? 9
   (b) Give quadruples and triples for $a := b * - c + - b$. 6

5. (a) Which problems affect the design of optimizer ? 6
   (b) Explain with the help of an example the control flow analysis towards global optimization. http://www.kuonline.in 9

6. (a) What is run-time storage administration ? Describe some strategies for it. 7
   (b) Discuss syntactic phase errors and recovery. Explain error recovery during operator-precedence parsing. 8

7. Explain the following in context to code optimization along with suitable examples – folding, code-movement, loop optimization and meet over paths. 15

8. Give examples of the following :
   (a) DAG
   (b) Copy Propagation
   (c) Peephole Optimization. 5,5,5