Roll No. ..... Total Pages : 2

BT-7/D-17 **37001**

COMPILER DESIGN

Paper – CSE–401

Time : Three Hours] [Maximum Marks : 100

Note : Attempt *five* questions in all, selecting at least *one* question from each unit. All questions carry equal marks.

UNIT–I

1. Give an overview of the compilation process and describe the role of the following in the lexical analysis phase using suitable examples :
   (a) Tokens & Regular expressions.
   (b) Finite Automata.

2. What is shift-reduce parsing ? IIlustrate the shift-reduce process using a suitable example. What are the widely used algorithms available for constructing an LR Parser ?

UNIT–II

3. Describe the reason for the need of an intermediate code. What are different ways in which intermediate code can be represented and what are their benefits ?

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4. Answer the following in the context of symbol tables :
   (a) When is a symbol table used in compilation ?
   (b) What are the contents of symbol table ?
   (c) How is scope management done in the context of symbol table ?

UNIT–III

5. What do you mean by run time storage ? Describe the stack allocation strategy for storage. Also describe *one* method of implementing block structures.

6. What kind of errors may be encountered at various stages of the compilation process ? How are lexical and syntactic phase errors handled ?

UNIT–IV

7. What rules must be followed by a code optimization process ? What are basic blocks ? Why are Basic blocks an important concept from both code generation and optimization point of view.

8. (a) What is directed Acyclic Graph ? Explain using an example.
   (b) What is peephole optimization ?

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