

Roll No. ....

Total Pages : 03

**BT-7/D-18**  
**COMPILER DESIGN**  
**IT-401N**

**37204**

Time : Three Hours]

[Maximum Marks : 75

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

**Unit I**

1. What do you mean by analysis of the source program in the compilation process ? What happens during the analysis phase and synthesis phase of a compiler ? Describe the grouping of phases in a compiler and specify the purpose of each phase.
2. Describe the following in the context of Lexical Analysis phase of a compiler :
  - (a) Tokens and their specification
  - (b) Regular expressions and their conversion to non-deterministic finite automata.

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**Unit II**

3. (a) What is the role and need of a parser in a compiler ?  
(b) What are the capabilities of a context free grammar ? When is a grammar said to be ambiguous ?
4. Give a brief overview of the types of parsing according to the way the production rules are implemented.

**Unit III**

5. What are the benefits of using machine independent intermediate code ? What are the commonly used intermediate code representation ?
6. Answer the following questions in brief :
  - (a) How is a code generated for a basic block from its DAG representation ?
  - (b) What do you mean by run time storage management ? <http://www.kuonline.in>
  - (c) What are the functions of an error handler ?

**Unit IV**

7. What is the need of Code Optimization ? What are the various ways of doing code optimization ? How does a control flow graph of a basic block help in optimization ?

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- 8: (a) Explain static storage management and heap storage management in the context of storage allocation.
- (b) What is meant by parameter passing ? How is it carried out in the Run Time Environment ?

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