

Roll No.

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BT-7/M-18

37001

COMPILER DESIGN

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. The compilation process is a sequence of various phases. Justify. Also distinguish between :
 - (a) Compiler and Interpreter
 - (b) Lexical analyzer and Parser
 - (c) Loader and linker.
2. How are parsing techniques classified based on the implementation of production rules ? What is predictive parsing ? How does a predictive parser implement recursive-decent parsing ?

Unit II

3. What is the purpose of intermediate code generation phase ? What are the properties of intermediate code ?

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Describe the following in the context of intermediate code generation :

- (a) Postfix notation
- (b) Three address code
- (c) Syntax tree.

4. What purpose is served by the symbol table ? What items are stored in symbol table ? What are the ways to implement symbol tables ?

Unit III

5. What do you mean by run time environment in compiler design ? Describe the following in the context of run time environment :
 - (a) What type of information is required for allocating memory to data items ?
 - (b) What is an activation record ? What is its structure ?
6. What kind of errors can be encountered in different phases of compiler design ? What are the goals of error handler in parser ? What are the semantics errors that the semantic analyzer is expected to recognize ?

Unit IV

7. What is the objective of code optimization ? What are the various phases at which improvement can be made ? What techniques are used for loop optimization ?
8. What are the main tasks of a code generator ? What things should be taken into consideration by the code generator to generate the code ? How is register allocation performed ?

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