Exam. Code : 105704
Subject Code : 1558

B.Sc. (Information Technology) Semester—IV

COMPILER DESIGN

Paper—V

Time Allowed—3 Hours] [Maximum Marks—75

Note :— Attempt any **FIVE** questions. All questions are of equal marks.

1. Discuss the factors to be considered in deciding the structure of a compiler. Differentiate between single-pass and multi-pass compilers.

2. (a) What is lexical analyzer ? Explain its role in detail.

   (b) Construct the parsing table for the following LL(1) grammar :

   $S \rightarrow aA/B$

   $A \rightarrow bB/a$

   $B \rightarrow c/bAc$

3. What is the purpose of Symbol Table ? How information is stored and retrieved from symbol table ? What are the operations allowed on symbol table ?

4. What is storage management ? Elaborate in detail the various storage management strategies.

5. Discuss the major factors considered in code generation.

6. Explain loop optimization with an example. Also give significance of induction variable in loop optimization and how to eliminate them.

7. What are the types of compilers ? Discuss and differentiate between them.

8. Write short notes on the following :

   (a) Translator

   (b) Intermediate code

   (c) Loop unwinding.