2316 45

Class–B.Sc. (IT) Sem. IV
Subject –Compiler Design
Paper-V

Time Allowed : 3 Hours **Maximum Marks :75**

Section – A

Note:- (i) Attempt any five questions. All questions carry equal marks.

(ii) Students can use Non-Programmable and non-storage type calculator.

1. Discuss the factors to be describe the structure of a compiler. Indicate the main functions of various phases of a typical compiler. 15

2. Explain the role of Lexical Analyzer. Also discuss interaction between Lexical Analyzer and Parser in detail. 15

3. What is the use of symbol table? What should be the contents of: symbol table? How different data structures help in organization of symbol tables? 15

4. Explain Code Generator algorithm. Given the expression:

   W: = (a–b) + (a–c) + (a–c)

   Translate into three-address-code sequence showing code generated, register descriptor and add descriptior. 15

5. What are different types of compilers? Discuss the features of incremental compiler in detail. 15

6. What do you mean by Parsing? Differentiate between top-down and bottom-up parsing giving suitable examples. 15

7. Explain following code optimization techniques with example:

   (a) Common sub-expression elimination

   (b) Code movement

   (c) Strength reduction

   (d) Dead Code elimination 15

8. Write short notes on following:

   (a) Loop optimization

   (b) Cross Compiler

   (c) Lexeme, Token and Pattern 15

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