

Bachelor of Computer Application (B.C.A.) Semester-V (CBS) Examination**COMPILER CONSTRUCTION****Paper-2**

Time : Three Hours]

[Maximum Marks : 50

N.B. :— (1) All questions are compulsory and carry equal marks.

(2) Illustrate your answers with suitable example and diagram wherever necessary.

EITHER

1. (A) Explain why we need translators. 5
- (B) Explain the term "optimization" in the context of compilers. 5

OR

- (C) Explain single pass and multi-pass compiler. 5
- (D) Explain "Bookkeeping" in compilation process. 5

EITHER

2. (A) What are the different features of High level language ? Explain. 5
- (B) Write a note on data elements. 5

OR

- (C) Explain the concept of l-value and r-value. 5
- (D) Write a note on storage allocation techniques. 5

EITHER

3. (A) Give the need of "lexical analysis" in compilation process. 5
- (B) Find out whether context free grammar is ambiguous or not in following grammar :
 $G = \{S \rightarrow SS, S \rightarrow ab, S \rightarrow ba, S \rightarrow \epsilon\}$ 5

OR

- (C) If G is the grammar $S \rightarrow Sbs|a$, show that G is ambiguous. 5
- (D) Obtain a derivation tree for the string 0011000 using grammar $S \rightarrow AOS|O|SS, A \rightarrow S|1A|10$ 5

EITHER

4. (A) Define parser. Explain shift-reduce parsing with suitable example. 5
- (B) What are the problems involved in design of code generator ? 5

OR

- (C) What is optimization ? When it is needed ? 5
- (D) How does a machine model help to generate good code ? Explain. 5

5. Attempt all :

- (A) Give the importance of "syntax analysis" phase in compilation process. 2½
- (B) What is block structured language ? 2½
- (C) What is Input buffering ? 2½
- (D) Write a note on "Register allocation and assignment". 2½