Bachelor of Science (B.Sc.) Semester—VI
(C.B.S.) Examination

COMPUTER SCIENCE

Paper—I

(Compiler Construction)

Time—Three Hours] [Maximum Marks—50

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

(2) Draw neat and labelled diagram wherever necessary.

EITHER

1. (a) List various phases of compiler and explain. 5

(b) What is three-address coding ? Explain its representation with suitable example. 5

OR

(c) Explain Bootstrapping and Book keeping. 5

(d) What do you mean by error handling ? Explain error handling in all phases of compilation. 5

EITHER

2. (a) Define High level programming language and explain its various features. 5

(b) Discuss in brief storage management. 5

OR

(c) Explain call-by-reference and call-by-value with suitable example in higher level language. 5

(d) Draw hierarchical structure of programming languages and explain. 5

EITHER

3. (a) Explain simple approach to design Lexical Analyzer. 5

(b) What do you mean by context free grammar ? Explain. 5

OR

(c) Explain role of Lexical Analyzer. Explain need of input buffering in Lexical analyzer. 5

(d) Draw parse tree for following string

if C_1 then S_1

else if C_2 then S_2 else S_3. 5

EITHER

4. (a) Explain Top-down parsing with example. 5

(b) Write short note on A simple code generator. 5

OR

(c) Explain loop optimization with suitable example. 5

(d) Construct the DAG for the following basic block :

D : = B * C

E : = A + B

B : = B * C

A : = E – D 5

5. (a) Explain various passes in compilation. 2½

(b) Write short note on Attribute and Declaration. 2½

(c) What is regular expression ? Explain. 2½

(d) Explain shift-reduce parsing with example. 2½