Bachelor of Computer Application (B.C.A.) Semester-V Examination

COMPILER CONSTRUCTION

Paper—2

Time : Three Hours] [Maximum Marks : 50

N.B. :— (1) All questions are compulsory and carry equal marks.
(2) Draw neat and labelled diagrams wherever necessary.

EITHER

1. (a) What is compiler ? Explain the structure of compiler. 5
(b) Explain how intermediate code is generated. 5

OR

(c) Discuss loop optimization giving a suitable example. 5
(d) What do you mean by 'phase' in compilation process ? Explain different phases of a compiler. 5

EITHER

2. (a) Discuss the various categories of statements in programming languages. 5
(b) Explain :
(i) Attributes
(ii) Declarations. 5

OR

(c) What is the role of lexical analyzer ? Explain. 5
(d) Let G be the grammar :
$S \rightarrow aB/bA$
$A \rightarrow a/aS/bAA$
$B \rightarrow b/bS/aBB.$
Find leftmost and rightmost derivation tree for the string aaabbabbba. 5

EITHER

3. (a) What approach is used in the design of lexical analyzer. 5
(b) Explain derivation and parse tree. 5

OR

(c) Explain with example the case of ambiguous grammar. 5
(d) Explain Ambiguity of context free grammar. If G is the grammar :
$S \rightarrow SbS/a$
Show that G is ambiguous. 5

EITHER

4. (a) Explain :
(i) Operator precedence parsing
(ii) Top down parsing. 5
(b) Write predictive parsing in detail. 5

OR

(c) Explain the code generation in detail. 5
(d) Discuss the Register allocation and assignment. 5

5. Attempt all :
(a) What is Book-keeping ? Explain. 2½
(b) Discuss the parameter transmission. 2½
(c) How will you implement lexical analyzer ? Explain. 2½
(d) What is symbol table ? Explain. 2½