KNT/KW/16/5222

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

COMPILER CONSTRUCTION

Paper—1

(Computer Science)

Time : Three Hours] [Maximum Marks : 50

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

(2) Illustrate your answer with suitable labelled diagram wherever necessary.

EITHER

1. (a) Write short note on Bootstrapping. 5

(b) How error handling is done in every phase of compilation ? 5

OR

(c) Explain Three Address Code with example. 5

(d) Explain different phases of compilation. Draw its phase diagram. 5

EITHER

2. (a) What are the characteristics of High Level programming language ? 5

(b) Write short note on The Lexical and Syntactic structure of a language. 5

OR

(c) Explain storage management in higher level language. 5

(d) What is operator ? Explain different types of operators found in many high level languages. 5

EITHER

3. (a) What is buffer ? Give its importance. Explain need of input buffering. 5

(b) How does context-free grammar is used to define a language ? 5

OR

(c) What is Lexical analysis ? Why is it needed in compilation process ? 5

(d) What is parse tree ? Explain how parse tree can be constructed from the derivation. Draw parse tree for following expression :

$(a + b/e + d^2) / a - b/c * d.$ 5

EITHER

4. (a) Which data structure is most suitable for symbol table ? Explain any one. 5

   (b) What do you mean by operator precedence parsing ? Explain with example. 5

OR

   (c) Explain Top-down parsing with example. 5

   (d) How loop optimization is performed ? Explain with example. 5

5. Attempt **all** :

   (a) Explain two phase compilation. 2½

   (b) Explain parameter transmission using call by value method. 2½

   (c) Define string and empty string. 2½

   (d) What is DAG ? Explain using example. 2½