

B.Tech. DEGREE EXAMINATION, MAY - 2015

(Examination at the End of Final Year)

COMPUTER SCIENCE

Paper - III : Compiler Design

Time : 3 Hours

Maximum Marks : 75

Answer question No.1 compulsory

(15 × 1 = 15)

Answer ONE question from each unit

(4 × 15 = 60)

- 1) a) What is meant by translator? Give any two translator names.
- b) What is the role of Semantic Analyzer?
- c) What is meant by code optimization?
- d) What is meant by syntax directed definition (SDD)?
- e) List the top-down parsing techniques.
- f) What is the use of YACC tool?
- g) List the error detection approaches.
- h) What is the difference between pass and phase?
- i) In how many ways, the intermediate code may be implemented?
- j) What is the use of Directed Acyclic Graph (DAG)?
- k) What is meant by Synthesized Attributes.
- l) List code-optimization techniques.
- m) What is meant by copy propagation?
- n) Give the significance of symbol table.
- o) What is the difference between syntax tree and parse tree?

UNIT - I

2) Draw a block diagram of phases of a compiler and indicate the main functions of each phase.

OR

- 3) a) Write short notes on input Buffering.
b) Write about lexical analyzer generator.

UNIT - II

4) Construct predictive parsing table for the following grammar

$$E \rightarrow E + T \mid T$$

$$T \rightarrow T F \mid F$$

$$F \rightarrow F * \mid a \mid b$$

OR

5) Construct SLR parsing table for the following grammar

$$S \rightarrow AS \mid b$$

$$A \rightarrow SA \mid a$$

UNIT - III

6) What is an ordered and unordered symbol table? What is the function of symbol table in the compilation process? Explain.

OR

- 7) a) Explain the role of intermediate code generation in compilation process.
b) Compare various forms of three-address code.

UNIT - IV

- 8) a) Explain the concept of object code forms.
b) Explain the different issues in the design of a code generator.

OR

- 9) a) Give the translate scheme to convert the expression grammar into three-address code.
b) Explain briefly error detection and recovery strategies.

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