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Question Paper Code: 31862

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Sixth Semester

Information Technology

01UIT602 – COMPILER DESIGN

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. List the error recovery actions in lexical analyzer.
2. Distinguish Compiler with interpreter.
3. Define handle pruning.
4. Enumerate ambiguous grammar.
5. Define back patching.
6. Write the methods of representing a syntax tree?
7. Compare and contrast register and address descriptors.
8. Define stack allocation.
9. What are the criteria used for code-improving transformations?
10. What is meant by cross compiler?

PART - B (5 x 16 = 80 Marks)

11. (a) Discuss in detail about the role of Lexical and syntax analyzer with the possible error recovery actions. (16)

Or

- (b) Describe in detail about the various phases of a compiler and show how the statement $A := B - C * 40$ is translated in various stages. (16)

12. (a) Design an SLR parser for the following grammar :

$$S \rightarrow AS \mid b$$

$$A \rightarrow SA \mid a. \quad (16)$$

Or

- (b) Solve the given regular expression $(a|b)^*abb(a|b)^*$ into NFA and find minimized DFA. (16)

13. (a) Discuss in detail the Syntax Directed Definitions (SDDs) to produce three-address code for Assignment statements. Explain with an example. (16)

Or

- (b) Explain the role of declaration statements in intermediate code generation. (16)

14. (a) (i) Explain the issues in design of a code generator. (8)

- (ii) Discuss run time storage management of a code generator. (8)

Or

- (b) Describe in detail about basic blocks and flow graphs. (16)

15. (a) Explain the principle sources of optimization in detail with an example. (16)

Or

- (b) (i) Describe the efficient data flow algorithms in detail. (8)

- (ii) Explain different storage allocation strategies. (8)