

FACULTY OF ENGINEERING

B.E. 4/4 (CSE) I-Semester (Supplementary) Examination, June/July 2011

COMPILER CONSTRUCTION

Time : Three Hours]

[Maximum Marks : 75

*Note :—Answer ALL questions from Part—A. Answer any FIVE questions from Part—B.*

PART—A (Marks : 25)

1. What is Boot Strapping ? 2
2. Differentiate between Compiler and Interpreter. 3
3. What is Left Recursion ? Eliminate left-Recursion for the given expression :  
 $A \rightarrow Aa \mid Ab \mid c \mid d.$  3
4. Show that the following grammar is ambiguous :  
 $S \rightarrow aSbS$   
 $S \rightarrow bSaS$   
 $S \rightarrow \epsilon$  (Epsilon). 3
5. What are the advantages of Syntax Directed Translator (SDT) ? Give the SDT to translate  $a^* - (b + c)$  into syntax tree. 3
6. What are the various parameter mechanisms ? 2
7. Write Indirect triple representation for the given expression :  
 $x := - a * b + - a * b.$  3
8. State the conditions to decide Leader in Basic Blocks. 2
9. What do you mean by Induction Variable ? 2
10. What is Relocation ? 2

PART—B (Marks : 50)

11. Show the translation process of compiler for the given expression ! position :  
 $= \text{initial} + \text{rate} * 60.$  10

12. (a) Check whether the following grammar is LL(1) or not :—  
     $S \rightarrow iEts \mid iEtses \mid a$   
     $E \rightarrow b.$  6
- (b) What are the features of an ambiguous grammar ? Give example. 4
13. (a) Differentiate between static runtime environment and stack based runtime environments. 5
- (b) What is symbol table ? What are its uses ? 5
14. Briefly explain the Loop optimization techniques. 10
15. Describe Data Flow Analysis. 10
16. (a) Discuss the design issues of Absolute Loader. 5
- (b) What do you understand by Dynamic Linking Concept ? 5
17. Write short notes on :—
- (a) Heap Management. 5
- (b) Recursive Descent Parsers. 5

