

## FACULTY OF ENGINEERING

B.E. 4/4 (CSE) I – Semester (Main) Examination, November/December 2012

Subject: Compiler Construction

Time: 3 Hours

Max.Marks : 75

*Note: Answer all questions from Part – A. Answer any five questions from Part – B.***PART – A** (25 Marks)

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 (3)  

$$A \rightarrow Aa|Ab|c|d$$
4. Show that the grammar is ambiguous  $S \rightarrow aSbS|bSaS|E$  (Epsclon) (3)
5. Write syntax tree for an expression  $a * - (b+c)$  (3)
6. What are the parameter passing mechanisms in a programming language? (2)
7. Write the indirect triple for the expression  $X := -a*b + -a*b$  (3)
8. State the rules to define loader in basic block. (2)
9. Define induction variable. (2)
10. What is relocation? (2)

**PART – B** (5x10 = 50 Marks)

11. Show the translation process of compiler for the given expression (10)  

$$\text{Success:} = \text{effort} + \text{IQ} * 100.$$
- 12.(a) Check whether the following grammar is LL(1) or not (6)  

$$S \rightarrow iEtS | iEtSeS | a$$

$$E \rightarrow b$$
 (b) What is ambiguous grammar give example? (4)
- 13.(a) Differentiate between static run time environment and stack based run time environment. (5)  
 (b) Discuss symbol table organization. (5)
14. Main ( ) (10)  

```

{
  int a[10], i,
  For (i = 0; i < 10; i++)
    a[i] = i*2;
}

```

 Convert above program into 3-address code and apply all optimization techniques on that code. (10)
15. Describe data flow analysis in detail. (10)
16. Discuss the design issues of absolute loader. (10)
17. Write short notes on: (5)  
 (a) Heap allocations (5)  
 (b) Recursive Descent parsers. (5)