

## MODULE 4

### 2-Marks

Q1. Given an example of decorated parse tree of a grammar of your choice.

### 3-Marks

Q1. Explain about SDD. How is it different from SDT?

Q2. Differentiate b/w static & dynamic checking.

Q3. Find the post fix expression of  $2 \uparrow 3 * 5 / (2 + 4)$  using the grammar:

$$E \rightarrow E / T \mid E * T \mid E \uparrow T \mid N$$

$$T \rightarrow (N + N) \mid N$$

$$N \rightarrow 2 \mid 3 \mid 4 \mid 5$$

### 9-Marks

counter (incrementer or decrementer (by 1))

Q1. Construct a parse tree for  $n$  after obtaining its SDD.  
(Clue:  $E \rightarrow E + 1 \mid E - 1 \mid \text{digit}$ )

## Module - 5

### 2 - Marks

Q.1.) List out the types of intermediate code representation.

### 3 - Marks

Q1.) Write short note on Control Stack.

Q2.) Discuss the need and significance of Runtime Storage Management.

Q3.) Construct AST for  $x * y - 5 + z$ .

### 9 - Marks

Q1 a) Implement the given expression using Quadruples, Triples & Indirect Triples:

$$p = a + b \times c / e \uparrow f + b \times c \quad (5)$$

b) Discuss the meaning of Short Circuit Code, with illustration. (4)

# Module-6

## 2-Marks

Q 1.) With an example elucidate what a Basic Block is.

## 3-Marks

Q 1.) List of the application of DAG. Also construct a DAG for the expression  $a = (a * b + c) - (a * b - c)$ .

Q 2.) Explain Functional Preserving Transforms, its significance and type with illustration.

Q 3.) Discuss the scope of Code Optimization. Give the optimized version of the following loop:

~~a, b, c~~ = 10, 20, 30  
for i in range(~~40~~):

$c = a + b$

$d = a - b$

$e = a * b$

$b *= i$

## 9-Marks

Q1 a) Write an essay on the design issues of a Code Generator. (5)

b) Generate the target code using Simple Code Generator of the expression:  $d = (a - b) + (a - c) + (a - c)$  (4)