UNIT 5

1) Explain activation tree and control stack with example?
2) Explain stack allocation with example?
3) What is activation record? Explain the contents of activation record?
4) Explain dynamic storage allocation strategies?
5) Explain following parameter passing methods:
    1) Call by value
    2) Call by value result
    3) Call by name
    4) Call by reference

UNIT 6

1) Explain following machine independent transformation techniques:
    1) Common sub expression and dead code elimination.
    2) Copy propagation and constant folding,

2) Explain how code motion and frequency reduction used for loop optimizations?
3) Explain global data flow analysis using data flow equations?
4) Explain different code generation issues with example?
5) Explain labeling algorithm with example?
6) For the following three address statements shown below, construct flow graph and DAG :
    1) t1 = 4*i
    2) t2 = a[t1]
    3) t3 = 4* i
    4) t4 = a[t3]
    5) t5 = t2* t4
    6) t6 = prod + t5
    7) prod = t6
    8) t7 = i + 1
    9) i = t7
    10) if i < = 20 goto (1)

7) Draw the DAG for the following:

```
d = b* c
e = a + b
b = b * c
a = e – d
```

8) Explain structure preserving transformation techniques with example

9) Explain register allocation and assignment with the suitable example?

10) Explain node listing and labeling algorithm with example?

11) Construct DAG and three address statements for following c program:

```
I = 1;

S = 0;

While (I < = 10 )

{

S = s + a[i][i];

I = I + 1;

}
```

12) Generate DAG representation of following code and list out the application of DAG.

```
I = 1;

While ( I < = 10 )

Do

Sum! = a[i];
```

13) Explain principles sources of optimization.

14) Discuss in detail about global data flow analysis.