**Linked List HW**

1. Given the following function, write a **template function** that can work for all data types.

char maximum( char a, char b, char c)

{

char max;

max = a;

if (b > max) then max = b; if (c > max) then max = c; return max;

}

2. We are given the following linked list where each node class contains an integer variable called d and a pointer to a node class called ptr.

**head**

**ptr**

**ptr**

**ptr**

1 2 3 4

***q p***

Write the code that will set a pointer r to the last node.

b) Write the code that will assign to an integer variable x the value at node 3, and then delete node 3. Pointer q points to node 2 and pointer p points to node 3.

3. Show what is produced by the following C++ code. Assume the node is in the usual item-next form with the item of type into (list and ptr are pointers of type node).

list = new node;

list->item = 10;

ptr = new node;

ptr->item = 13;

ptr->next = NULL;

list->next = ptr;

ptr = new node;

ptr->item = 18;

ptr->next = list->next;

list->next = ptr;

cout « list->item « " " « ptr->item « " ";

ptr = ptr-> next;

cout « ptr->item « endl;

4. What is printed by the following C++ program?

#include <iostream>

using namespace std;

struct Node

{

};

int item; Node \*next;

int

main ()

{

Node \*cur, \*head;

int \*p, x;

cur = new Node;

cur -> item = 5;

cur -> next = NULL;

head = cur;

cur = new Node;

cur -> item = 8;

cur -> next = NULL;

head -> next = cur;

cur = NULL;

cur = new Node; cur -> item = 21; cur -> next = NULL;

head ->next ->next = cur;

cout << head -> next -> item << endl;

cout << head -> next -> next -> item << endl;

for (cur = head; cur != NULL; cur = cur ->next)

cout << cur ->item << endl;

p = &x;

\*p = 6;

cout << "Curr " << \*p << endl;

}