**Quiz-4 Linked List**

**1: What does the following function do for a given Linked List with first node as head?**

voidfun1(structnode\* head)

{

  if(head == NULL)

    return;

  fun1(head->next);

  printf("%d  ", head->data);

}

A. print all the nodes of linked list

B. print all the nodes of linked list in reverse order

C. print alternate nodes of linked list

D. print alternate nodes of linked list in reverse order

**2. What is the output of following function for start pointing to first node of following linked list?**

1->2->3->4->5->6

|  |
| --- |
| voidfun(structnode\* start)  {    if(start == NULL)      return;    printf("%d  ", start->data);      if(start->next != NULL )      fun(start->next->next);    printf("%d  ", start->data);  } |

A) 146641 B) 135135 C) 1235 D) 1 3 5 5 3 1

**3.In the worst case, the number of comparisons needed to search a singly linked list of length n for a given element is**

A) log2n B) n/2 C) log2n–1 D) n

|  |  |  |
| --- | --- | --- |
|  |  |  |

**4: The following C function takes a simply-linked list as input argument. It modifies the list by moving the last element to the front of the list and returns the modified list. Some part of the code is left blank.**

typedef struct node

{ int value;

struct node \*next;

} Node;

Node \*move\_to\_front(Node \*head)

{

Node \*p, \*q;

if ((head = = NULL || (head->next = = NULL))

return head;

q = NULL; p = head;

while (p-> next !=NULL)

{ q=p;

p=p->next;

}

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

return head;

}

Choose the correct alternative to replace the blank line.

(A) q = NULL; p->next = head; head = p;

(B) q->next = NULL; head = p; p->next = head;

(C) head = p; p->next = q; q->next = NULL;

(D) q->next = NULL; p->next = head; head = p;

**5. Consider the following function that takes reference to head of a Doubly Linked List as parameter. Assume that a node of doubly linked list has previous pointer as prev and next pointer as next.**

|  |
| --- |
| voidfun(structnode \*\*head\_ref)  {      structnode \*temp = NULL;      structnode \*current = \*head\_ref;      while(current !=  NULL)      {          temp = current->prev;          current->prev = current->next;          current->next = temp;          current = current->prev;      }      if(temp != NULL )          \*head\_ref = temp->prev;  } |

Assume that reference of head of following doubly linked list is passed to above function 1 <--> 2 <--> 3 <--> 4 <--> 5 <-->6. What should be the modified linked list after the function call?

**A.** 2 <--> 1 <--> 4 <--> 3 <--> 6 <->5 **B.** 5 <--> 4 <--> 3 <--> 2 <--> 1 <->6

**C.** 6 <--> 5 <--> 4 <--> 3 <--> 2 <--> 1 **D.** 6 ←→5←-> 4←-> 3←-> 1←-> 2