

# Rajalakshmi Engineering College

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## NeoColab\_REC\_CS23231\_DATA STRUCTURES

### REC\_DS using C\_Week 1\_MCQ

Attempt : 1  
Total Mark : 10  
Marks Obtained : 10

#### Section 1 : MCQ

1. The following function reverse() is supposed to reverse a singly linked list. There is one line missing at the end of the function.

What should be added in place of "/\*ADD A STATEMENT HERE\*/", so that the function correctly reverses a linked list?

```
struct node {  
    int data;  
    struct node* next;  
};  
static void reverse(struct node** head_ref) {  
    struct node* prev = NULL;  
    struct node* current = *head_ref;  
    struct node* next;  
    while (current != NULL) {  
        next = current->next;
```

```
current->next = prev;
prev = current;
current = next;
}
/*ADD A STATEMENT HERE*/
}
```

**Answer**

```
*head_ref = prev;
```

**Status :** Correct

**Marks :** 1/1

2. Which of the following statements is used to create a new node in a singly linked list?

```
struct node {
    int data;
    struct node * next;
}
typedef struct node NODE;
NODE *ptr;
```

**Answer**

```
ptr = (NODE*)malloc(sizeof(NODE));
```

**Status :** Correct

**Marks :** 1/1

3. Linked lists are not suitable for the implementation of?

**Answer**

Binary search

**Status :** Correct

**Marks :** 1/1

4. Consider the singly linked list: 13 -> 4 -> 16 -> 9 -> 22 -> 45 -> 5 -> 16 -> 6, and an integer K = 10, you need to delete all nodes from the list that are less than the given integer K.

What will be the final linked list after the deletion?

**Answer**

13 -> 16 -> 22 -> 45 -> 16

**Status : Correct**

**Marks : 1/1**

5. Given the linked list: 5 -> 10 -> 15 -> 20 -> 25 -> NULL. What will be the output of traversing the list and printing each node's data?

**Answer**

5 10 15 20 25

**Status : Correct**

**Marks : 1/1**

6. Given a pointer to a node X in a singly linked list. If only one point is given and a pointer to the head node is not given, can we delete node X from the given linked list?

**Answer**

Possible if X is not last node.

**Status : Correct**

**Marks : 1/1**

7. In a singly linked list, what is the role of the "tail" node?

**Answer**

It stores the last element of the list

**Status : Correct**

**Marks : 1/1**

8. The following function takes a singly linked list of integers as a parameter and rearranges the elements of the lists.

The function is called with the list containing the integers 1, 2, 3, 4, 5, 6, 7 in the given order. What will be the contents of the list after the function completes execution?

```

struct node {
    int value;
    struct node* next;
};

void rearrange (struct node* list) {
    struct node *p,q;
    int temp;
    if (! List || ! list->next) return;
    p=list; q=list->next;
    while(q) {
        temp=p->value; p->value=q->value;
        q->value=temp;p=q->next;
        q=p?p->next:0;
    }
}

```

**Answer**

2, 1, 4, 3, 6, 5, 7

**Status :** Correct

**Marks :** 1/1

9. Consider an implementation of an unsorted singly linked list. Suppose it has its representation with a head pointer only. Given the representation, which of the following operations can be implemented in  $O(1)$  time?

- i) Insertion at the front of the linked list
- ii) Insertion at the end of the linked list
- iii) Deletion of the front node of the linked list
- iv) Deletion of the last node of the linked list

**Answer**

I and III

**Status :** Correct

**Marks :** 1/1

10. Consider the singly linked list: 15 -> 16 -> 6 -> 7 -> 17. You need to delete all nodes from the list which are prime.

What will be the final linked list after the deletion?

**Answer**

15 -> 16 -> 6

**Status :** Correct

**Marks :** 1/1