CS & IT ENGINEERING

Data Structure

Linked List-1

DPP 01

Discussion Notes

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01 Question

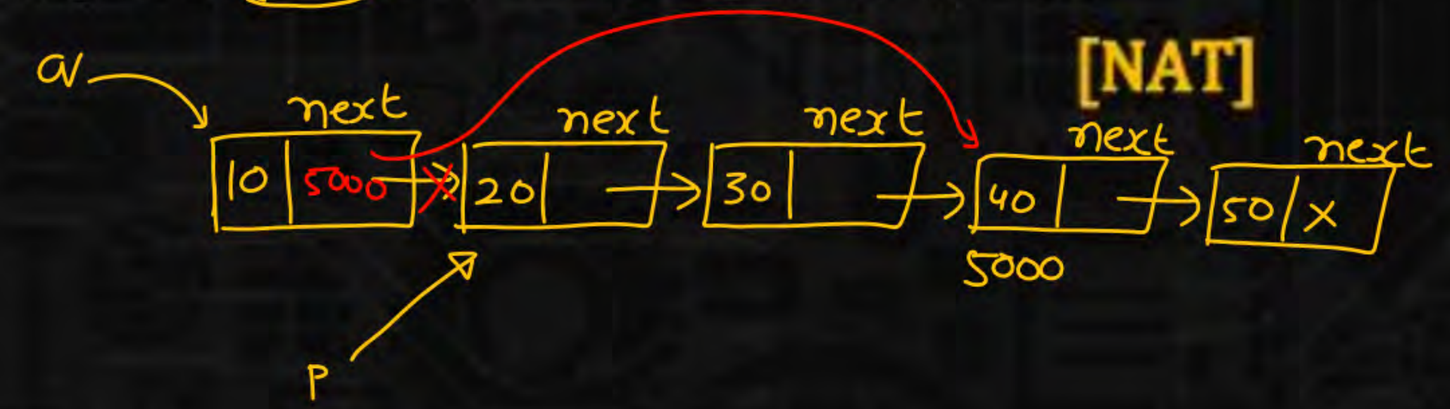
02 Discussion

Q.1

[NAT]

Consider a single linked list q with 2023 elements is passed to the following function:

```
struct node {
    int data;
    struct node *next;
};
void f(struct node *q){
    struct node *p;
    p=q->next;
    q->next=p->next->next;
}
```



The size of the linked list q after the execution of the function is _____.

2023-2 = 2021

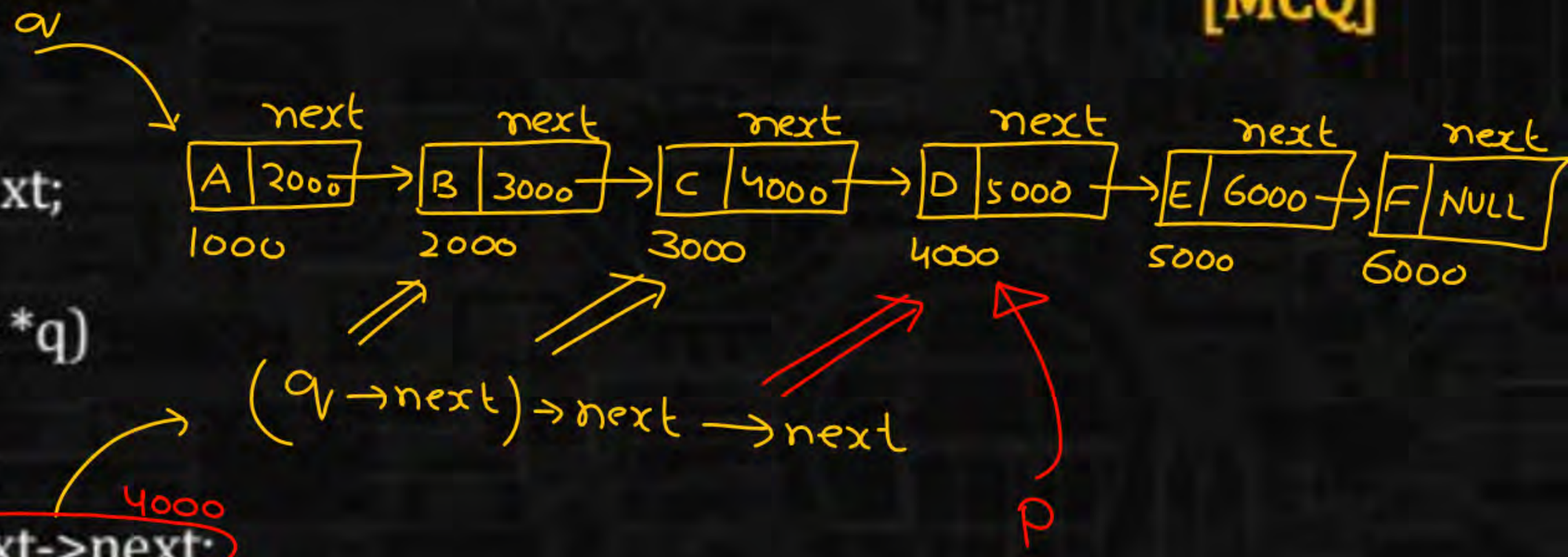
Q.2

Consider a single linked list q['A', 'B', 'C', 'D', 'E', 'F'] is passed to the following function:

[MCQ]

```
struct node {
    int data;
    struct node *next;
};
void f(struct node *q)
{
    struct node *p;
    p=q->next->next->next;
    q->next->next->next=p->next->next;
    p->next->next=q->next;
    printf("%c", p->next->next->next->data);
}
```

The output is-



A. C B. D C. E D. B

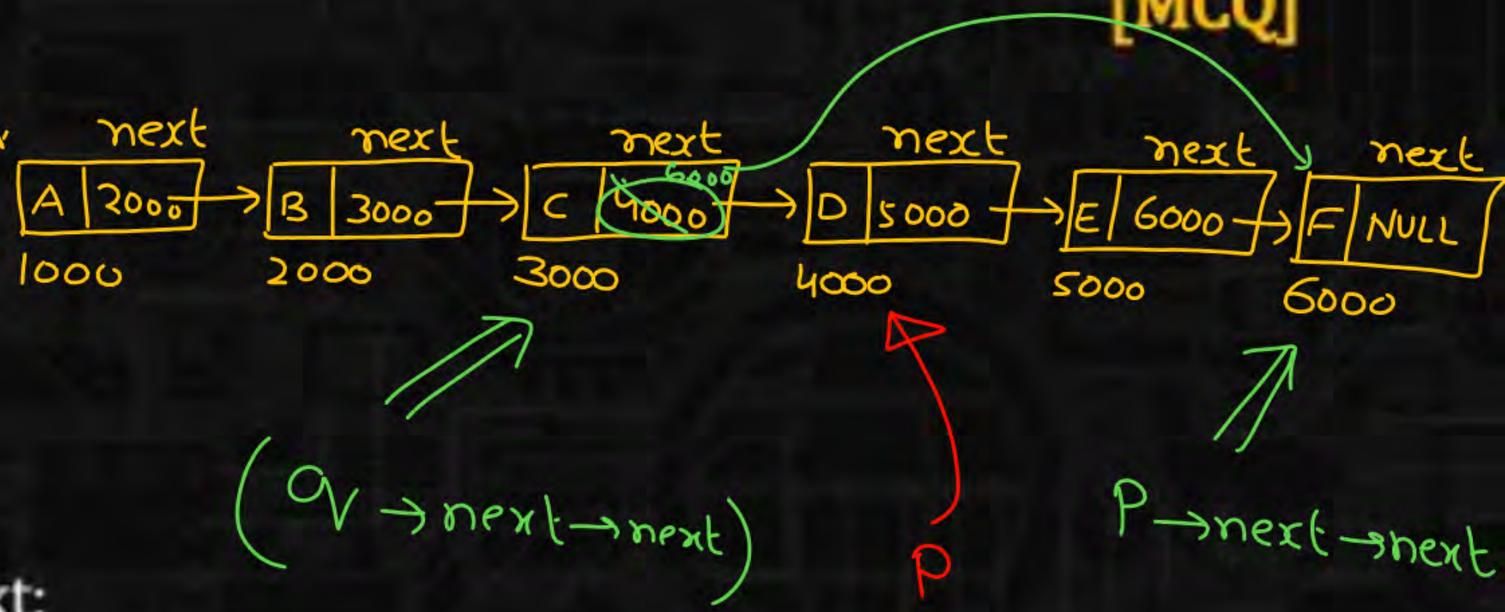
Q.2

[MCQ]

Consider a single linked list q['A', 'B', 'C', 'D', 'E', 'F'] is passed to the following function:

```
struct node {
    int data;
    struct node *next;
};
void f(struct node *q)
{
    struct node *p;
    p=q->next->next->next;
    q->next->next->next=p->next->next;
    p->next->next=q->next;
    printf("%c", p->next->next->next->data);
}
```

The output is-



A. C B. D C. E D. B

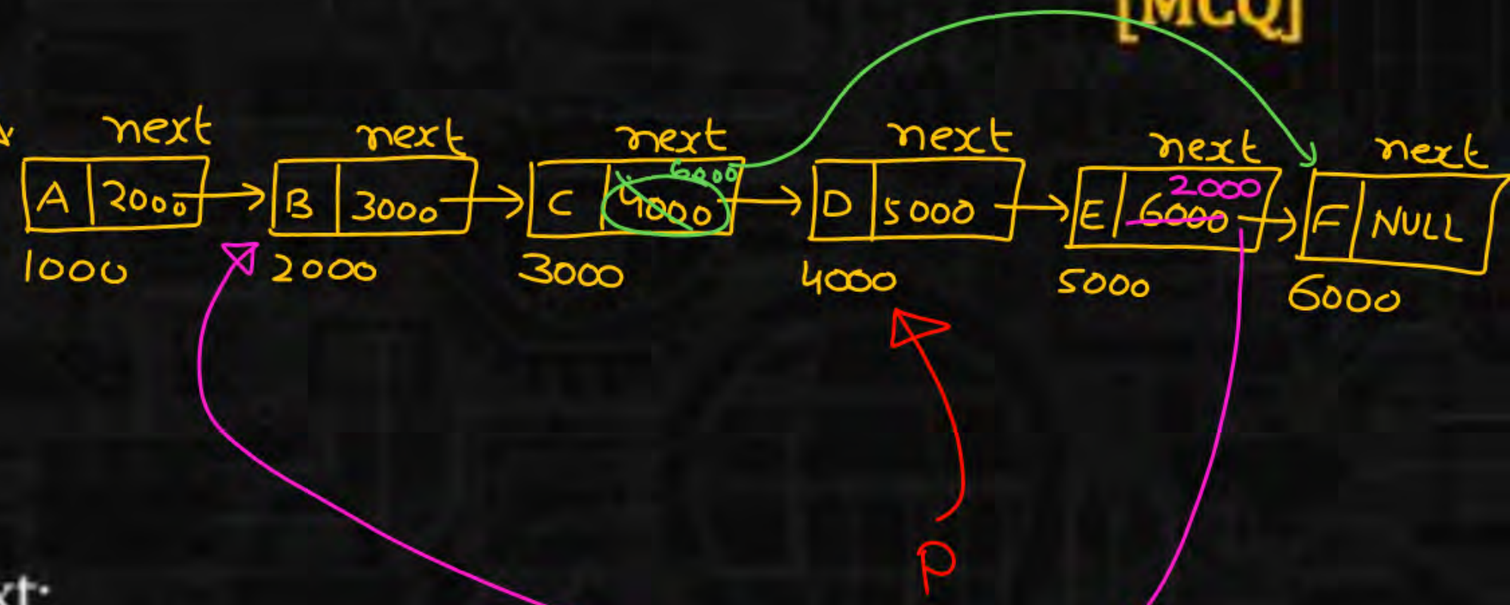
Q.2

[MCQ]

Consider a single linked list q['A', 'B', 'C', 'D', 'E', 'F'] is passed to the following function:

```
struct node {
    int data;
    struct node *next;
};
void f(struct node *q)
{
    struct node *p;
    p=q->next->next->next;
    q->next->next->next=p->next->next;
    p->next->next=q->next;
    printf("%c", p->next->next->next->data);
}
```

The output is-



(A)

(2000)

C

A. C B. D C. E D. B

Q.3

[MCQ]

Consider the following statements:

P: Linked Lists supports linear accessing of elements Correct

Q: Linked Lists supports random accessing of elements. Incorrect

Which of the following statements is/are INCORRECT?

A. P only

B. Q only

C. Both P and Q

D. Neither P nor Q

(B)

Q.4

Consider a single linked list q['A', 'B', 'C', 'D'] is passed to the following function:

[MCQ]

```
void f(struct node *q)
{
    if(q==NULL) return;
1.  f(q->next);
2.  printf("%c ", q->data);
}
```

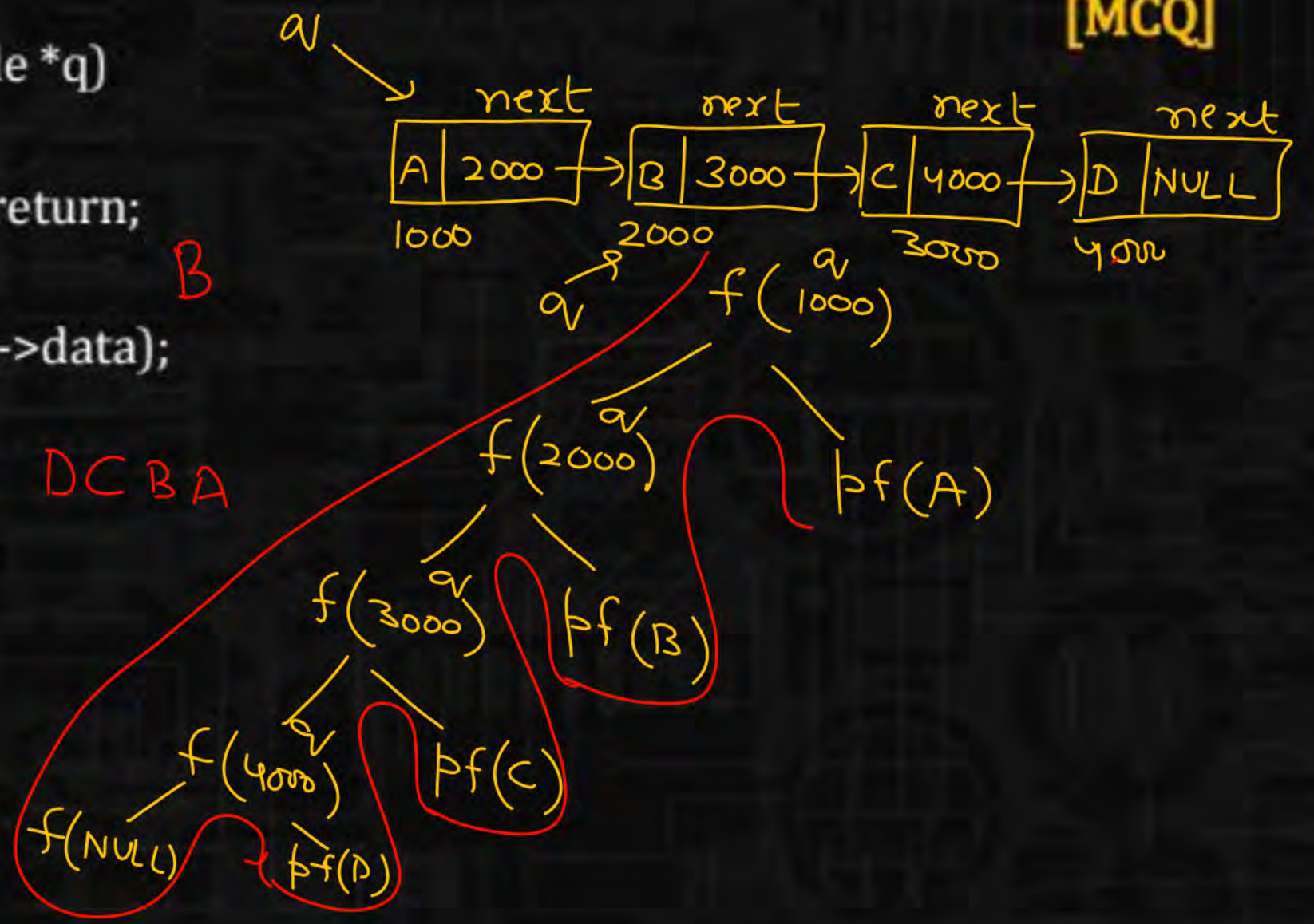
The output is-

A. C D B A

B. D C B A

C. A B C D

D. B C D A



Q.5

[MCQ]

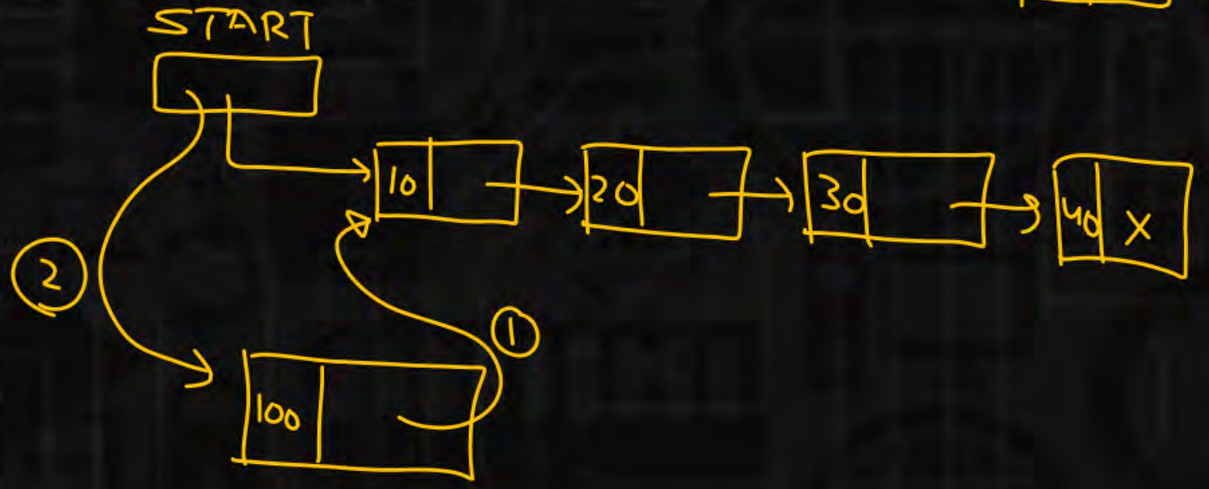
Consider the following statements:

Correct

P: Insertion at the end of the linked list is difficult than insertion at the beginning of the linked list.

Q: Deletion at the beginning of linked list is easier as compared to deletion at the end of the linked list.

Which of the following statements is/are CORRECT?



A. Both P and Q

B. P only

C. Q only

D. Neither P nor Q

Q.5

[MCQ]

Consider the following statements:

Correct

P: Insertion at the end of the linked list is difficult than insertion at the beginning of the linked list.

Correct

Q: Deletion at the beginning of linked list is easier as compared to deletion at the end of the linked list.

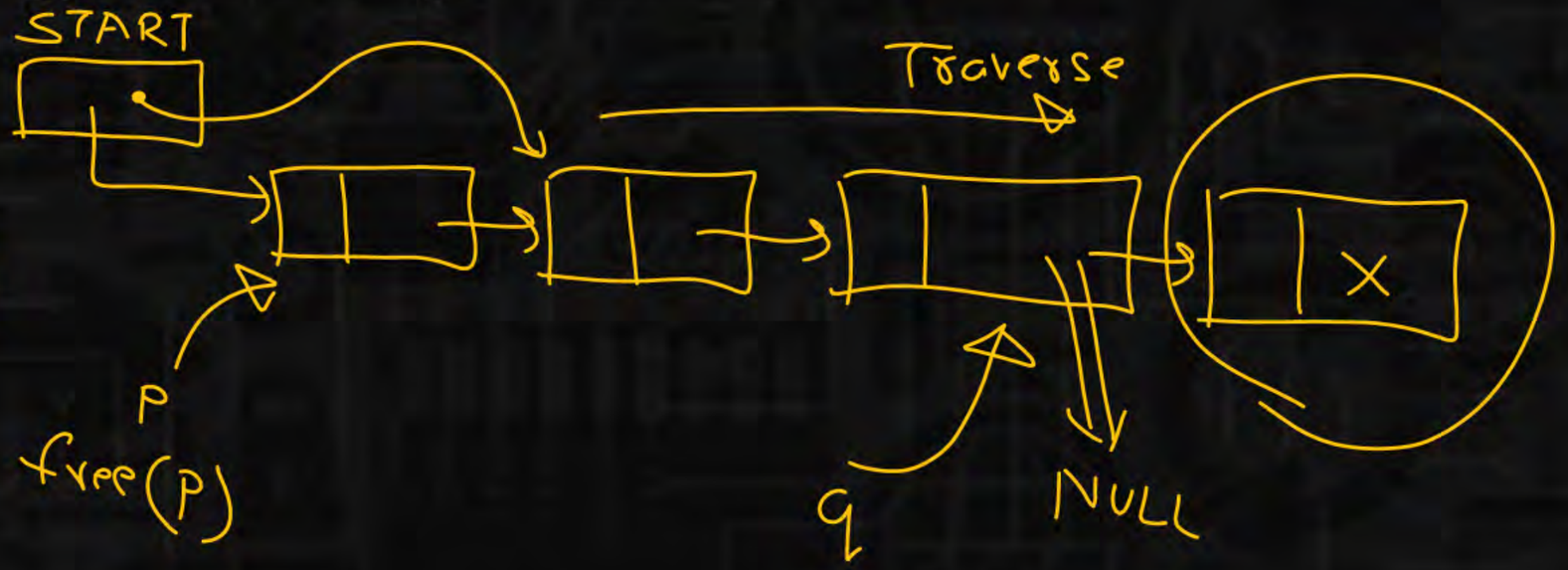
Which of the following statements is/are CORRECT?

A. Both P and Q

B. P only

C. Q only

D. Neither P nor Q

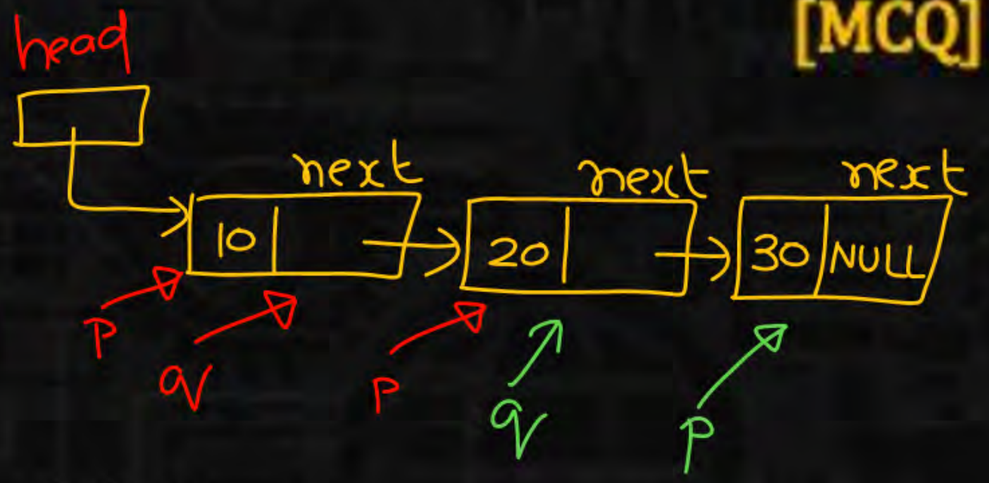


Q.6

The following C function takes a single-linked list p of integers as a parameter. It deletes the last element of the single linked list. Fill in the blank space in the code:

[MCQ]

```
struct node {
        int data;
        struct node *next;
};
void delete_last(struct node *head)
{
        struct node *p=head, *q;
        if(!head) return;
        if(head->next==NULL){free(head);head=NULL;
        return;}
        while(_____a_____){
          q = p;
          p=p->next;
        }
        _____b_____;
        free(p);
        q=NULL; p=NULL;
        }
```



(C)

p->next != NULL

q->next = NULL

q->next = NULL

free(p)

A. a: !head ; b: q->next = NULL;

B. a: p->next ! = head ; b: q->next = q

C. a: p->next ! = NULL ; b: q->next = NULL

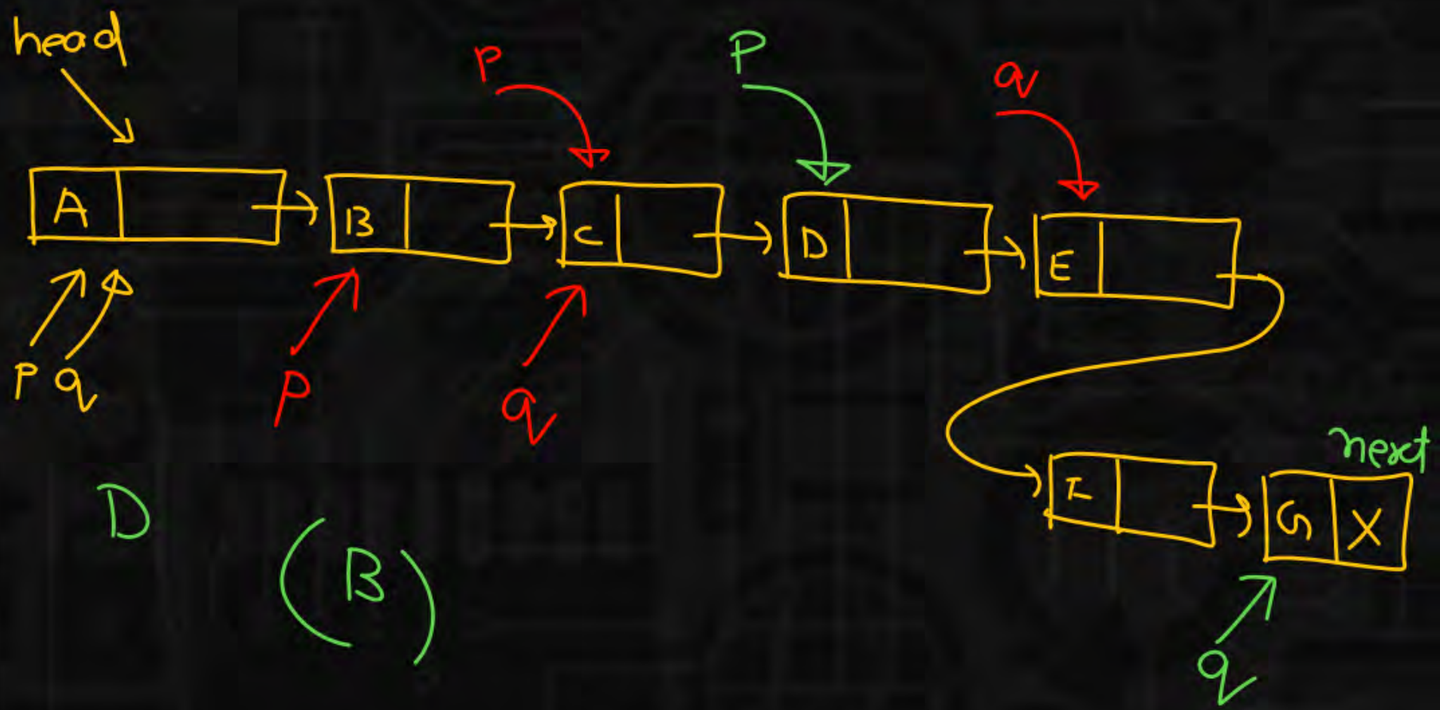
D. a: head->next ! = p ; b: q->next = p

Q.7

Consider a single linked list q[['A', 'B', 'C', 'D', 'E', 'F', 'G'] is passed to the following function:

[MCQ]

```
void func(struct node *head){
    struct node *p=head, *q=head;
    while(q!=NULL && q->next!=NULL && q->next->next != NULL){
        p=p->next;
        q=q->next->next;
    }
    printf("%c", p->data);
}
```



D (B)

The output is-

A. C

B. D

C. E

D. B

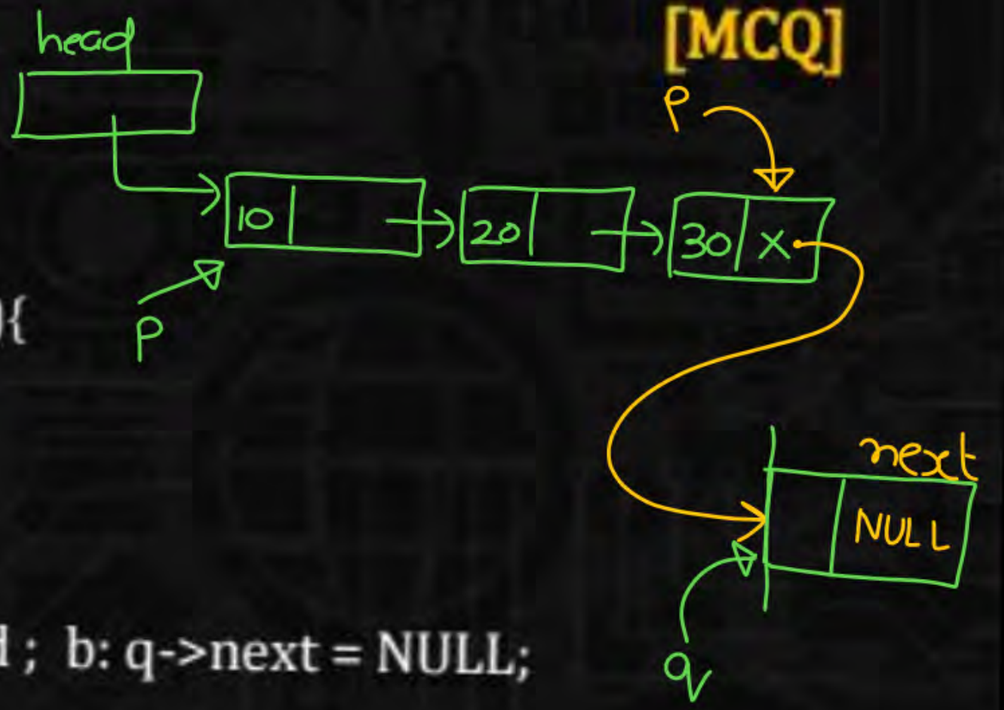
Q.8

[MCQ]

The following C function takes a single-linked list p of integers as a parameter. It inserts the element at the end of the single linked list. Fill in the blank space in the code:

```
struct node
{
    int data;
    struct node *next;
};
void insert_last(struct node *head, struct node *q){
struct node *p=head;
if(!head) return;
while(_____a_____)
        p=p->next;
        _____b_____;
        q=NULL;
        p=NULL;
}
```

Assume, q is the address of the new node to be added.



p->next != NULL

A. a: !head ; b: q->next = NULL;

B. a: q->next ! = NULL; b: p->next = q

C. a: p->next ! = NULL ; b: p->next = q

D. a: head->next ! = p ; b: q->next = p

THANK YOU GW
SOLDIERS !