

NCERT Solutions for Class 12 Computer Science (C++) – Queue

Long Answer Type Questions [4 marks each]

Question 1:

Define member function `delque()` to perform delete operation on a linked queue where each node has the following structure :

```
struct node
{
    char name[20]
    int marks;
    node *link;
```

```
};  
class queue  
{  
node *front, *rear;  
public :  
queue() {front=rear=NULL;  
}  
void delque ( );  
};    [CBSE Comptt., 2014]
```

Answer:

```
void queue : : delque ()  
{  
if ( front != NULL)  
{  
node *Temp = front;  
cout << Temp -> name << Temp  
->marks;  
front = front->link;  
delete Temp;  
if(front == NULL)  
rear = NULL;  
}  
else  
cout << "Queue is empty";
```

```
}
```

(4 marks for correct program)

Question 2:

Give the necessary declaration of linked' implemented Queue containing players information (as defined in the following definition of Node). Also write a user defined function in C++ to delete one Player's information from the Queue.

[CBSE Comptt., 2013]

```
struct node
{
    int Player No ;
    char PlayerName[20];
    Node*Link;
}
```

Answer:

```
NODE *QUEUEDEL(Node * front, int val, char val2[ ])
```

```
{
    Node *temp;
    if (front ==NULL)    [1]
        cout<<"Queue EMPTY";
    {
        else
        {
            temp=front ;
```

```

temp®PlayerNo=val;    [1]
strcpy (temp®PlayerName, val2);
front=front®Link;    [1]
delete temp;
}
return (front);
} [1]

```

Question 3:

Write a function QDELETE () in C++ to perform delete operation on a Linked Queue, which contains Passenger no and Passenger name. Consider the following definition of Node in the code,

```

struct node
{
long int Pno;
char Pname [20];
node *Link;
};    [0.D, 2013]

```

Answer:

//Function to delete queue elements Node * QUEUE (Node * front, int val, char vail [])

```

{
Node *temp;
if (front == NULL)
cout <<"Queue Empty";

```

```

else
{
temp = front;
temp@Pno=val;
strcpy (temp@Pname, vail);
front = front@Link;
delete temp;
}
return (front);
}    [4]

```

Question 4:

Write a function QINSERT() in C++ to perform insert operation on a Linked Queue, which contains Client no and Client name. Consider the following definition of NODE in the code of . QINSERT (). **[Delhi, 2013]**

```

struct Node
{
long int Cno; // Client No
char Cname [20]; //
Client Name
Node *Next ;
};

```

Answer:

Function to Insert element

Node * QINSERT (Node *rear, int val),

```

char val []
{
Node *temp;
temp = new Node;
temp->Cno = val;
strcpy (temp->Cname, val);
temp->NEXT=NULL;
rear->NEXT=temp;
rear=temp;
return (rear);
}      [4]

```

Question 5:

Write a function in C++ to perform Insert operation in a circular Queue containing Layer's information (represented with the help of an array of structure Player). ***[CBSE SQP 2013]***

```

struct Player
{
long PID;      //Player ID
char Pname [20];}    //Player Name
Player*Link;
}

```

Answer:

```

void Insert ( )
{
    PLAYER *P = new PLAYER;
    cout <<"Enter Player ID & Name";
    cin>>P→PID;
    gets (P→ Pname);
    P→Link=NULL;
    if ((fronts = NULL) && (rear == NULL))
    {
        front = rear = P;
    }
    else
    {
        rear→Link = P;
        rear = P;
    }
}    [4]

```

Question 6:

Write a function in C++ to perform insert operation in a static circular queue containing book's information (represented with the help of an array of structure BOOK). ***[O.D, 2012]***

```

struct BOOK
{
    long Accno; //Book Accession Number char Title[20];    //Book Title
};

```

Answer:

```
struct BOOK
{
long Accno; char Title [20] ;
int front, rear;
}B [10] ;
void insert()
{
if (r e a r == s i z e - 1 & & f r o n t == 0 || front== rear+1)
{
cout<<"\n Circular queue is full"; return;
}
else if(rear== -1)
{
rear++;
front++;
}
else if(rear==size-1)
rear=0;
else
{
rear++;
}
cout<<"Enter Title : " ;
cin>>B[rear] . Title;
```



```

cout<<"Enter Accno : " ;
cin>>B[rear] . Accno;
}      [4]

```

Question 7:

Write a function in C++ to perform insert operation in a dynamic queue containing DVD's information (represented with the help of an array of structure DVD). *[Delhi, 2012]*

Answer:

/*Function in C++ to perform insert in a dynamic queue is given as*/

```

struct DVD
{
long No; // DVD Number
char Title[20]; // DVD Title
DVD *Link
};
void insert(struct DVD *start, char data[20] ) ;
{
DVD *q, *temp;
// Dynamic memory has been allocated for a node
temp=(DVD*)malloc(size of (DVD));
temp=Title[20]=data[20] ;
temp->Next=NULL;
if (start == NULL) /*Element
inserted at end*/
while (q->Next != NULL)

```

```
q=q.Next;  
q.Next = temp;  
}    [4]
```

Question 8:

Write the definition of a member function INSERT() for a class QUEUE in C++, to insert a CUSTOMER in a dynamically allocated Queue of items considering the following code which is already written as a part of the program,

```
struct CUSTOMER  
{  
int CN0; char CNAME[20];  
CUSTOMER *Link;  
};  
Class QUEUE  
{  
CUSTOMER *R,*F;  
Public:  
QUEUE(){R=NULL;F=NULL;}  
void INSERT();  
void DELETE()  
-QUEUE();  
};    [CBSE SQP 2013]
```

Answer:

```

void QUEUE : : INSERT ()
{
CUSTOMER*T=New CUSTOMER;
cin>>T>>;
gets(T→CNAME);
//OR cin>>T>>CNAME;
T → LINK = NULL;
if (R==NULL)
{
F=T; R=T;
}
else
{ R → LINK = T; R = T;
}
}

```

(1 Mark for correct a new code)

(1/2 Mark for entering data to new code)

(1/2Mark for assigning NULL to link of the new code)

(1/2 Mark for assigning front to the first code as L=T)

(1/2 Mark for linking the last node to new code as R→Link=T)

(1 Mark for assign Read to the new code as R=T)