DELHI PUBLIC SCHOOL JAMMU
ASSIGNMENT FOR PRE-BOARD-I(2019-2020)

Class: XII
Subject: Computer Science(283)

Q1.
Write the type of C++ Operators (Arithmetic, Logical, and Relational Operators) from thefollowing:
(i) !(ii) !=(iii) &&(iv) %

Q2.

Observe the following program very carefully and write the name of those header file(s), which are essentially needed to compile and execute thefollowing program successfully:

```
void main()
{
char text[20], newText[20];
gets(text);
strcpy(newText,text);
for(inti=0;i<strlen(text);i++)
if(text[i] = ='A')
text[i] = text[i]+2;
puts(text);
}
```

Q3.

Find and write the output of the following C++ program code:

```
typedef char STRING[80];
void MIXNOW(STRING S)
{
int Size=strlen(S);
for(int I=0;I<Size;I+=2)
{
char WS=S[I];
S[I]=S[I+1];
S[I+1]=WS;
}
for (I=1;I<Size;I+=2)
if (S[I]>='M' && S[I]<='U')
S[I]='@';
}
void main()
{
STRING Word="CBSEEXAM2019";
MIXNOW(Word);
cout<<Word<<endl;
}
```

Q4. What is a copy constructor? Illustrate with a suitable C++ example.

Q5. Write the output of the following C++ code. Also, write the name of feature of Object Oriented Programming used in the following program jointly illustrated by the Function 1 to Function 4.

```
        voidMy_fun ( ) // Function 1
        {
        for (int I=1 ; I<=50 ; I++) cout<< "-" ;
        cout<<end1 ;
        }
        voidMy_fun (int N) // Function 2
        {
        for (int I=1 ; I<=N ; I++) cout<<"*" ;
        cout<<end1 ;
        }
        voidMy_fun (int A, int B) // Function 3
        {
        for (int I=1. ;I<=B ;I++) cout<<A*I ;
        cout<<end1 ;
        }
        voidMy_fun (char T, int N) // Function 4
        {
        for (int I=1 ; I<=N ; I++) cout<<T ;
        cout<<end1;
        }
        void main ( )
        {
        int X=7, Y=4, Z=3;
        char C='#' ;
        My_fun (C,Y) ;
        My_fun (X,Z) ;
        }
```

Q6. Define a class Ele_Bill in C++ with the following descriptions:
Private members:
        Cname of type character array
        Pnumber of type long
        No_of_units of type integer
        Amount of type float.
        Calc_Amount( ) This member function should calculate the
        amount as No_of_units*Cost .
        Amount can be calculated according to the following conditions:
No_of_units Cost
        First 50 units Free
        Next 100 units 0.80 @ unit
        Next 200 units 1.00 @ unit
        Remaining units 1.20 @ unit
Public members:
        * A function Accept( ) which allows user to enter Cname,
        Pnumber, No_of_units and invoke function Calc_Amount().
        * A function Display( ) to display the values of all the data members
        on the screen.

Q.7

Write a user-defined function AddEnd4(int A[][4],intR,int C) in C++ to find and display the sum of all the values, which are ending with 4 (i.e., unit place is 4).

19   5   4

Q8. Write a user defined function in C++ to find the sum of both left and right diagonal elements from a two dimensional array.

Q9. An array S[10] [30] is stored in the memory along the column with each of its element occupying 2 bytes. Find out the memory location of S[5][10], if element S[2][15] is stored at the location 8200.

Q10. Write a function RevText() to read a text file " Input.txt " and Print only word starting with 'I' in reverse order .

Example: If value in text file is: INDIA IS MY COUNTRY
Output will be: AIDNI SI MY COUNTRY

Q11. Write a function in C++ to search and display details, whose destination is "Cochin" from binary file "Bus.Dat". Assuming the binary file is containing the objects of the following class:

```
class BUS
{ intBno; // Bus Number
char From[20]; // Bus Starting Point
char To[20]; // Bus Destination
public:
char * StartFrom ( ); { return From; }
char * EndTo( ); { return To; }
void input() { cin>>Bno>>; gets(From); get(To); }
void show( ) { cout<<Bno<< ":"<<From << ":" <<To<<endl; }
};
```

Q12. Write a function in C++ to add more new objects at the bottom of a binary file "STUDENT.dat", assuming the binary file is containing the objects of the following class :

```
class STU
    {
    intRno;
    charSname[20];
    public: void Enter()
    {
    cin>>Rno;gets(Sname);
    }
    void show()
    {
    count<<Rno<<sname<<endl;
    }
};
```

Q13. State any one Distributive Law of Boolean Algebra and Verify it using truth table.
Q14. Draw the Logic Circuit of the following Boolean Expression:
((U + V').(U + W)). (V + W')

Q15. Reduce the following Boolean Expression to its simplest form using K-Map:
F(X,Y,Z,W)= Σ (0,1,2,3,4,5,8,10,11,14)