AUTUMN BREAK HOLIDAY HOMEWORK 2018-19

Subject Computer
Class 3

Q1. Write about the Keyboard and its use?
Q2. Define what is CPU?
Q3 Write about the MS Paint?
Q4. What is the use of Enter and Del keys?
Q5. What is the use of computer?

Subject computer
Class 4

Q1. What is the MS Word?
Q2. What is the Abacus?
Q3 Write about the Input device?
Q4. What is input device give two examples with diagram?
Q5. How to create and save file in MS Word?

Subject: Computer
Class 5

Q1. How to create the Mail Merge in MS-Word?
Q2. What is MS Word?
Q3. What is the detail of computer?
Q4. Create a chart of computer related term?
Q5. Write about the different tools of MS Paint?

Class – VI
Sub.:- Computer Science

Q.1:- Write about the 10 use of computer?
Q.2:- Write about the detail of two output devices with diagram?
Q.3:- How to start and shut down the computer write all steps?
Q.4:- Make a Chart of computer related Device?

Class – VII
Sub.:- Computer Science

Q.1:- Give the Introduction of MS Word?
Q.2:- Write a conversion Binary to decimal number system?
Q.3:- What is the use on Internet?
Q.4:- Make a Chart of computer related Device?

Class – VIII
Sub.:- Computer Science

Q.1:- What are uses and misuses of Internet?
Q.2:- Write about the Google?
Q.3:- Write a conversion Binary to Decimal, Decimal to Binary, Octal to Decimal and Decimal to Octal Number system?
Q.4:- Write a program of HTML with output?
Q.5:- Make Chart of Computer related Term.

<div align="center">**Class – IX**</div>
<div align="center">**Sub.:- Computer Science**</div>

1. Write down the following programs in the python.
   a. To find area & parameter of the rectangle
   b. To find the area of triangle by using
   c. To find the simple interest.
   d. To find the compound interest
   e. To find addition, subtraction, multiply divide, modules, floor division, reminder
   f. To convert the temperature Fahrenheit to Celsius and Celsius to Fahrenheit or vice versa.
   g. To find and check the given no. is even or odd.
   h. To find the table of any number.
   i. To find the factorial of any number.
   j. To find the sum of an natural number.

<div align="center">**Class – X**</div>
<div align="center">**Sub.:- Computer Science**</div>

Project: - Make a chart on the following topics according to your Roll No.

1-10   Different types of websites, Make a comparison chart of the features of a web portal, blog and a web directory, Famous Personalities in the field of Computer

11-21   Make a comparison chart of different types of protocols, E-Reservation steps for getting Railway or Air ticket using any govt. E-Reservation website, latest technologies used to transfer data.

 Write HTML Code in the Notebook. And also draw the web page in the notebook with output.

HOLIDAY HOMEWORK FOR CLASS XI COMPUTER SCIENCE WITH PYTHON

Note: Solve these chapters according to group

Chapter 1: Computer Fundamentals

Chapter 2: Software Concepts

Chapter 3: Data Representation in Computers

Chapter 4: Microprocessors and Memory Concepts

Chapter 1: Algorithms and Flowcharts

Chapter 2: Programming Methodology

Chapter 1: Getting Started

Chapter 2: Functions

Chapter 3: Conditional and Looping Construct

Chapter 1: Strings

Chapter 2: Lists

Chapter 3: Dictionaries

Chapter 4: Tuples

KENDRIYA VIDYALAYA KHETRI NAGAR
HOLIDAY HOMEWORK FOR CLASS -XII
SUBJECT:COMPUTER SCIENCE

1. Rewrite the following program after removing the syntactical error(s), if any Underline each correction:

```
#include <iostream.h>
void main( )
{
struct Book
{
char Book_name[20];
char Publisher_name[20];
int Price = 170;
} New Book;
gets(Book_name);
gets(Publisher_name);
}
```

2. Rewrite the following program after removing the syntactical errors (if any). Underline each correction.

```
#include [iostream.h]
class MEMBER
{
int Mno;float Fees;
PUBLIC:
void Register(){cin>>Mno>>Fees;}
void Display{cout<<Mno<<" : "<<Fees<<endl;}
};
void main()
{
MEMBER M;
Register();
M.Display();
}
```

3. Rewrite the following program after removing the syntactical errors (if any). Underline each correction.

```
#include <iostream.h>
struct Pixels
{       int Color,Style;}
void ShowPoint(Pixels P)
{       cout<<P.Color,P.Style<<endl;}
void main()
{
        Pixels Point1=(5,3);
        ShowPoint(Point1);
```

```
            Pixels Point2=Point1;
                Color.Point1+=2;
            ShowPoint(Point2);
        }
```

4.   Rewrite the following program after removing the error(s), if any. Underline each correction.

```
#include <iostream.h>
void main( )
{
int x, sum =0;
cin>>n;
for (x=1;x<100, x+=2)
if x%2=0
sum+=x;
cout<< "sum=" >>sum;
}
```

5. Will the following program execute successfully? If no, state the reason(s) :

```
#include<iostream.h>
#include<stdio.h>
#define int M=3;  void
main( )
{
const int s1=10;
int s2=100;  char
ch; getchar(ch);
s1=s2*M;  s1+M
=  s2;
cout<<s1<<s2 ;
}
```

18. Predict the output of the following code:

```
# include<iostream.h>
#include<conio.h> void
main()
{
int arr[] = {12, 23, 34, 45};
int *ptr = arr;
int val = *ptr; cout << val << endl;  val =
*ptr++; cout << val << endl;

val = *ptr; cout << val << endl;  val =
*++ptr; cout << val << endl;
}
```

19. Find the output of the following code.

```
#include<iostream.h>
#include<conio.h> void
main()
{
int arr[] = {12, 23, 34, 45};
int *ptr = arr;
int val = *ptr; cout << val << endl;  val =
*ptr++; cout << val << endl;

val = *ptr; cout << val << endl;  val =
*++ptr; cout << val << endl;  val = ++*ptr;
cout << val << endl;
}
```

20. . #include<iostream.h>
#include<conio.h> void
main()

```
{
int arr[] = {12, 23, 34, 45};
int *ptr = arr;
int val = *ptr; cout << val << endl;  val =
(*ptr)++; cout << val << endl;  val = *ptr; cout
<< val << endl;
val = *++ptr; cout << val << endl;
}
```

21.  ```
     #include<iostream.h>
     #include<conio.h> void
     main()
     {
     int arr[] = {2, 33, 44, 55};
     int *ptr = arr;
     int val = *ptr; cout << val << endl;  val =
     *++ptr ; cout << val << endl;  val = *ptr;
     cout << val << endl; val = * ptr++; cout <<
     val << endl;
     }
     ```

22. Write the output of the following program:
     ```
     #include<iostream.h>
     #include<conio.h> void
     main( )
     {
     clrscr( ); int a =32;
     int *ptr = &a; char ch =
     'A'; char *cho=&ch;
     cho+=a;  // it is simply adding the addresses.
     *ptr + = ch;
     cout<< a << "" <<ch<<endl;
     }
     ```

23. Write the output of the following program:
     ```
     #include<iostream.h>
     #include<conio.h> void
     main( )
     {
     clrscr( ); int a =32;
     int *ptr = &a; char ch =
     'A'; char *cho=&ch;
     *cho+=a;      // it is adding the values.  cout<< a
     << "" <<ch<<endl;
     }
     ```

24. Write a function in C++ to print the count of the word the as an independent
     word in a text file STORY.TXT.
     For example, if the content of the file STORY.TXT is
     There was a monkey in the zoo.

The monkey was very naughty.
Then the output of the program should be 2.

25. Assume a text file "coordinate.txt" is already created. Using this file create a C++ function to count the number of words having first character capital.

Example:

Do less Thinking and pay more attention to your heart. Do Less Acquiring and pay more Attention to what you already have. Do Less Complaining and pay more Attention to giving. Do Less criticizing and pay more Attention to Complementing. Do less talking and pay more attention to SILENCE.

Output will be : Total words are 16

26. Write a function in C++ to count the number of lines present in a text file "STORY.TXT".

27. Write a function in C++ to count the number of alphabets present in a text file "NOTES.TXT".

28. Write a function in C++ to write the characters entered through the keyboard into the file"myfile.txt", until a '#' character is entered.

29. **Answer the questions (i) and (ii) after going through the following class:**
    ```
    class Seminar
    {
    int Time;
    public:
    ```

```
Seminar() //Function 1
{
Time=30;cout<<"Seminar starts now"<<end1;
}
void Lecture() //Function 2
{
cout<<"Lectures in the seminar on"<<end1;
}
Seminar(int Duration) //Function 3
{
Time=Duration;cout<<"Seminar starts now"<<end1;
}
~Seminar()
//Function 4
{
cout<<"Vote of thanks"<<end1;
}
};
```
i) In Object Oriented Programming, what is Function 4 referred as and when does it get invoked/ called?

ii) In Object Oriented Programming, which concept is illustrated by Function 1 and Function 3 together? Write an example illustrating the calls for these functions.

30.   Answer the questions (i) and (ii) after going through the following program

```
#include<iostream.h>
#include<string.h>
class Bazar
{
        char Type[20];
        char Product[20];
        int Qty;
        float Price;
        Bazar()                                 //Function 1
        {
                strcpy(Type,"Electronic");
                strcpy(Product,"Calculator");
                Qty = 10;
                Price=225;
        }

    public:
        void Disp( )                            //Function 2
        {
                cout<<Type<<"-"<<Product<<":"<<Qty
                        <<"@"<<Price<<endl;
        }

    };
```

```
void main( )
{
        Bazar B;                                    //Statement 1
        B.Disp();                                   //Statement 2
}
```

(i)   Will Statement 1 initialize all the data members for object B with the
        values given in the Function 1? (Yes OR No). Justify your answer
        suggesting the correction(s) to be made in the above code.

(ii)   What shall be the possible output when the program gets executed?
        (Assuming, if required – the suggested correction(s) are made in the
        program)

31.   Given a class as follows:

```
class Match
{
int Time;
int Points;
public:
Match(int y, int p)    //Conctructor1
{
Time=y;
Points =p;
}
Match(Match &M);       // Constructor 2
};
```
        (i)   Create an object, such that it invokes Constructor 1.
        (ii)   Write complete definition for Constructor 2.

32.   Answer the questions (i) and (ii) after going through the following class:
```
class player
{
        int health;
        int age;
    public:
        player() { health=7; age=17 }                      //Constructor1
        player(int h, int a) {health =h; age = a ; }       //Constructor2
        player( player &p) { }                             //Constructor3
        ~player() { cout<<"Memory Free"; }                 //Destructor
};
void main(){
        player p1(9,26);        //Statement1
        player p3 = p1;         //Statement3
}
```

(i) When p3 object created specify which constructor invoked and why?

(ii) Write complete definition for Constructor3?

5.   Find the output of the following program : 2

```
#include<iostream.h>
void main()
{
int Numbers[] = {2,4,8,10};
int *ptr = Numbers;
for (int C = 0; C<3; C++)
{
cout<< *ptr << "@";
ptr++;
}
cout<<endl;
for(C = 0; C<4; C++)
{
(*ptr)*=2;
--ptr;
}
for(C = 0; C<4; C++)
cout<< Numbers [C]<< "#";
cout<<endl;
}
```

6.   What is the output of the following program if all the necessary header files have been included:

```
char *Name= "a ProFile";
  for(int x =0; x<strlen(Name); x++)
{
    if(islower(Name[x]) )
      Name[x]=toupper(Name[x] );
    else
        if(isupper(Name[x]) )
            if (x%2!=0)
                Name[x]=tolower(Name[x-1]);
          else
                Name[x]--;
}
cout<<Name<<endl;
```

7.   Find the output of the following program:
```
#include<iostream.h>
void main( )
{
int U=10,V=20;
for(int I=1;I<=2;I++)
{
cout<<"[1]"<<U++<<"&"<<V – 5 <<endl;
cout<<"[2]"<<++V<<"&"<<U + 2 <<endl;
}
```

```
        }

8.      #include<stdlib.h>
        #include<iostream.h>
        void main( )
        {
        randomize( );
        char City[ ][10]={"DEL","CHN","KOL","BOM","BNG"};
        int Fly;
        for(int I=0; I<3;I++)
        {
        Fly=random(2) + 1;
        cout<<City[Fly]<<":";
        }
        }
        Outputs:
            (i)      DEL : CHN : KOL:
            (ii)     CHN: KOL : CHN:
            (iii)    KOL : BOM : BNG:
            (iv)     KOL : CHN : KOL:


9.      Find the output of the following program.
        #include<iostream.h>
        void Withdef(int HisNum=30)
        {
        for(int I=20;I<=HisNum;I+=5)
        cout<<I<<",";
        cout<<endl;
        }
        void Control(int &MyNum)
        {
        MyNum+=10;
        Withdef(MyNum);
        }
        void main()
        {
        int YourNum=20;
        Control(YourNum);
        Withdef();
        cout<<"Number="<<YourNum<<endl;

10.     Find the output of the following program:
        #include<iostream.h>
        void main( )
        {
        long NUM=1234543;
        int F=0,S=0;
```

```
do
{
int R=NUM % 10;
if (R %2 != 0)
F += R;
else
S += R;
NUM / = 10;
} while (NUM>0);
cout<<F-S;
}
```

11. Observe the following program GAME.CPP carefully, if the value of Num entered by the user is 14, choose the correct possible output(s) from the options from (i) to (iv), and justify your option.

```
//Program:GAME.CPP
#include<stdlib.h>
#include<iostream.h>
void main( )
{
randomize( );
int Num,Rndnum;
cin>>Num;
Rndnum=random(Num)+7;
for(int N=1;N<=Rndnum;N++)
cout<<N<<" ";

}
```

Output Options:
(i) 1 2 3 (ii) 1 2 3 4 5 6 7 8 9 10 11
(iii) 1 2 3 4 5 (iv) 1 2 3 4

12. Give the output of the following program:

```
#include<iostream.h>
#include<conio.h>
int g=20;
void func(int &x,int y)
{
x=x-y;
y=x*10;
cout<<x<<','<<y<<'\n';
}
void main( )
{
int g=7;
func(g,::g);
cout<<g<<','<<::g<<'\n';
```

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```
func(::g,g);
cout<<g<<','<<::g<<'\n';
}
```

13.   Find the output of the following program:

```
#include<iostream.h>
struct Box {
int Len, Bre, Hei;
};
void Dimension(Box B)
{
cout << B.Len << " X " << B.Bre << " X ";
cout << B.Hei << endl;
}
void main ( )
{
Box B1 = {10, 20, 8}, B2, B3;
++B1.Hei;
Dimension (B1);     //first calling
B3= B1;
++B3.Len;
B3.Bre++;
Dimension (B3);   // second function calling
B2= B3;
B2.Hei += 5;
B2.Len - = 2;
Dimension (B2); // third function calling
}
```

14.   Find the output of the following program:
```
#include <iostream.h>
struct PLAY
{ int Score, Bonus;
};

void Calculate(PLAY &P, int N=10)
        {
            P.Score++;P.Bonus+=N;  }

void main()
{
PLAY PL={10,15};
Calculate(PL,5);
cout<<PL.Score<<":"<<PL.Bonus<<endl;
Calculate(PL);
```

```
cout<<PL.Score<<":"<<PL.Bonus<<endl;
Calculate(PL,15);
cout<<PL.Score<<":"<<PL.Bonus<<endl;
}
```

16..   In the following C++ program , what will the maximum and minimum value of r
generated with the help of random function.

```
#include<iostream.h>
#include<stdlib.h>
void main()
{
        int r;
        randomize();
        r=random(20)+random(2);
        cout<<r;
}
```

17.   Study the following program and select the possible output from it:
```
#include<iostream.h>
#include<stdlib.h>
const int Max=3;
void main( )
{
randomize();
int Number;
Number=50+random(Max);
for(int P=Number; P >=50;P- -)
cout<<P<<"#";
cout<<endl;
}
```
    (i)   53#52#51#50#
    (ii)   50#51#52#
    (ii)   50#51#
    (iv)   51#50#

18.   Find the output of the following program:
```
#include<iostream.h>
void main()
{
int A[]={10,20,30,40,50};
int *p=A;
while(*p<30)
{
```

```
if(*p%3!=0)
*p = *p+2;
else
*p=*p+1;
*p++;
}
for(int J=0;J<=4;J++)
{
cout<<A[J]<< "@";
if(J%3 == 0)
cout<<endl;
}
cout<<A[4]*3<<endl;
}
```

19.   Find the output of the following program:
```
#include <iostream.h>
void Changethecontent(int Arr[ ], int Count)
{
 for (int C=1;C<Count;C++)
Arr[C-1]+=Arr[C];
}
void main( )
{
int A[ ]={3,4,5},B[ ]={10,20,30,40},C[ ]={900,1200};
Changethecontent(A,3);
Changethecontent(B,4);
Changethecontent(C,2);
for (int L=0;L<3;L++) cout<<A[L]<<'#';
cout<<endl;
for (L=0;L<4;L++) cout<<B[L] <<'#';
cout<<endl;
for (L=0;L<2;L++) cout<<C[L] <<'#';   }
```

20.   In the following program, if the value of Guess entered by the user is 65, what will be the
        expected output(s) from the following options (i), (ii), (iii) and (iv)?
```
#include <iostream.h>
#include <stdlib.h>
void main()
{
int Guess;
randomize();
cin>>Guess;
for (int I=1;I<=4;I++)
{
New=Guess+random(I);
cout<<(char)New;
}   }
```

21.   #include <iostream.h> void
Secret(char Str[ ])
{
for (int L=0;Str[L]!='\0';L++); for (int
C=0;C<L/2;C++)
if (Str[C]=='A' || Str[C]=='E') Str[C]='#';
else
{
char Temp=Str[C];
Str[C]=Str[L-C-1];
Str[L-C-1]=Temp;
}
}
void main()
{
char Message[ ]="ArabSagar";
Secret(Message); cout<<Message<<endl;
}

22.   Given a binary file PHONE.DAT, containing records of the following structure type

```
class Phonlist
{
        char Name[20];
        char Address[30];
        char AreaCode[5];
        char PhoneNo[15];
    public:
        void Register();
        Void Show();
        int CheckCode(char AC[])
        {
            return strcmp(AreaCode,AC);
        }
};
```
Write a function TRANSFER ( ) in C++, that would copy all those records which
are having AreaCode as "DEL" from PHONE.DAT to PHONBACK.DAT.

23.   Given a binary file TELEPHON.DAT, containing records of the following class
Directory:
class Directory
{
char Name[20];
char Address[30];
char AreaCode[5];

```cpp
    char Phone_No[15];
public:
  void Register();
  void Show();
  int CheckCode(char AC[])
  {
     return strcmp(AreaCode,AC[]);
  }
};
```

Write a function COPYABC in C++ that would copy only those records having AreaCode as "123" from TELEPHON.DAT to TELEBACK.DAT.

24.   Given a binary file SPORTS.DAT, containing records of the following
structure type :
struct Sports
{
char Event[20];
char Participant[10][30];
};
Write a function in C++ that would read contents from the file SPORTS.DAT
and creates a file named ATHLETIC.DAT copying only those records from
SPORTS.DAT where the event name is "Athletics".

25.   Write a function in C++ to search for a BookNo from a binary file "BOOK.DAT",
assuming the binary file is containing the objects of the following class.

```
class BOOK
{
        int Bno;
        char Title[20];
 public:
        int RBno(){return Bno;}
        void Enter(){cin>>Bno;gets(Title);}
        void    Display(){cout<<Bno<<Title<<endl;}
};
```

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

```
class STUD
{
        int Rno;
        char Name[20];
 public:
        void Enter()
{
```

```
            cin>>Rno;gets(Name);
            }
                void    Display(){cout<<Rno<<Name<<endl;}
            };
```

1.   Define a class TEST in C++ with following description:
        Private Members
        • TestCode of type integer
        • Description of type string
        • NoCandidate of type integer
        • CenterReqd (number of centers required) of type integer
        • A member function CALCNTR() to calculate and return the number of centers as
        (NoCandidates/100+1)
        Public Members
        • A function SCHEDULE() to allow user to enter values for TestCode, Description,
        NoCandidate & call function CALCNTR() to calculate the number of Centres
        • A function DISPTEST() to allow user to view the content of all the data members

2   Define a class in C++ with following description:
        Private Members
        • A data member Flight number of type integer
        • A data member Destination of type string
        • A data member Distance of type float
        • A data member Fuel of type float
        • A member function CALFUEL() to calculate the value of Fuel as per the
        following criteria:

Distance	Fuel
<=1000	500
more than 1000 and <=2000	1100
More than 2000	2200

        Public Members
        " A function FEEDINFO() to allow user to enter values for Flight Number,
        Destination, Distance & call function CALFUEL() to calculate the quantity of Fuel
        " A function SHOWINFO() to allow user to view the content of all the data members

3   Define a class Clothing in C++ with the following descriptions:

            Private Members:
                    Code   of type string
                    Type   of type string
                    Size   of type integer
                    Material   of type string
                Price   of type float

            A function Calc_Price() which calculates and assigns the value of Price as
            follows:
                    For the value of Material as "COTTON"

Type	Price (Rs.)
TROUSER	1500
SHIRT	1200

For Material other than "COTTON" the above mentioned Price gets reduced by 25%.

Public Members:
A constructor to assign initial values of Code, Type and Material with the word "NOT ASSIGNED" and Size and Price with 0.

A function Enter () to input the values of the data members Code, Type, Size and Material and invoke the CalcPrice() function.

A function Show () which displays the content of all the data members for a Clothing.

4.   Define a class Travel in C++ with the description given below:

Private Members:
                T_Code of type string
                No_of_Adults of type integer
                No_of_Children of type integer
                Distance of type integer
                TotalFare of type float

Public Members:
                A constructor to assign initial values as follows :
                T_Code with the word "NULL"
                No_of_Adults as 0
                No_of_Children as 0
                Distance as 0
                TotalFare as 0

     A function AssignFare( ) which calculates and assigns the value
of the data member TotalFare as follows :

For each Adult
Fare (Rs)	For Distance (Km)
500	>=1000
300	<1000 & >=500
200	<500

For each Child the above Fare will be 50% of the Fare mentioned in
the above table.

For example :

If Distance is 750, No_of_Adults = 3 and No_of_Children = 2

Then TotalFare should be calculated as

No_of_Adults * 300 + No_of_Children * 150

i.e. 3 * 300 + 2 * 150 = 1200

• A function EnterTraveK) to input the values of the data members

   T_Code, No_of_Adults, No_of_Children and Distance; and invoke the AssignFare( )

function.

• A function ShowTraveK) which displays the content of all the data members for a

Travel.

5   Answer the questions (i) to (iv) based on the following code :

```
class CUSTOMER
{
int Cust_no;
char Cust_Name[20];
protected:
void Register();
public:
CUSTOMER();
void Status();
};
class SALESMAN
{
int Salesman_no;
char Salesman_Name[20];
protected:
float Salary;
public:
SALESMAN();
void Enter();
void Show();
};
class SHOP : private CUSTOMER , public SALESMAN
{
char Voucher_No[10];
char Sales_Date[8];
public:
SHOP();
void Sales_Entry();
```

```
void Sales_Detail();
}
```
(iii)   Write the names of data members which are accessible from objects
          belonging to class CUSTOMER.
(iv)   Write the names of all the member functions which are accessible from objects
          belonging to class SALESMAN.
(v)   Write the names of all the members which are accessible from member functions
          of class SHOP.
(iv) How many bytes will be required by an object belonging to SHOP?

6.   Answer the questions (i) to (iv) based on the following:

```
class PUBLISHER
{
char Pub[12];
double Turnover;
protected:
void Register();
public:
PUBLISHER();
void Enter();
void Display();
};
class BRANCH
{
char CITY[20];
protected:
float Employees
public:
BRANCH();
void Haveit();
void Giveit();
};
class AUTHOR : private BRANCH , public PUBLISHER
{
int Acode;
char Aname[20];
float Amount;
public:
AUTHOR();
void Start();
void Show();
};
```

(i)   Write the names of data members, which are accessible from objects
          belonging to class AUTHOR.
(ii)   Write the names of all the member functions which are accessible
          from objects belonging to class BRANCH.
(iii)   Write the names of all the members which are accessible from

member functions of class AUTHOR.
(iii)   How many bytes will be required by an object belonging to class AUTHOR?

7   Answer the questions (i) to (iv) based on the following code:

```
class Dolls
{
        char DCode[5];
protected:
                float Price ;
                void CalcPrice(float);
 public:
                Dolls( );
                void DInput( );
                void DShow( );
};
class SoftDolls: public Dolls
{
        char SDName[20];
        float Weight;
 public:
        SoftDolls( );
        void SDInput( );
        void SDShow( );
};
class ElectronicDolls: public Dolls
{
        char EDName[20];
        char BatteryType[10];
        int Battieries;
 public:
        ElectronicDolls ( );
        void EDInput( );
        void EDShow( );
};
```

(i)   Which type of Inheritance is shown in the above example?

(ii)   How many bytes will be required by an object of the class ElectronicDolls?

(iii)   Write name of all the data members accessible from member functions of the class SoftDolls.

(iv)   Write name of all the member functions accessible by an object.

8   consider the following class declaration and answer the question below :

```
class university {
int noc;
protected;
char uname[25];
public:
university();
char state[25];
void enterdata();
void displaydata();
};
class college:public university{
int nod;
char cname[25];
protected:
void affiliation();
public:
college();
void enrol(int ,int);
void show();
};
class department:public college{
char dname[25];
int nof;
public:
department();
void display();
void input();
};
```

    (i) Which class's constructor will be called first at the time of declaration of an object of class department?

    (ii) How many bytes does an object belonging to class department require?

(iii)Name the member function(s), which are accessed from the object

of class department.

(iv) Name the data member, which are accessible from the
object of class college.

1 Write a function in C++ which accepts an integer array and its size as arguments and replaces elements having odd values with thrice and elements having even values with twice its value.
Example : If an array of five elements initially contains the elements
3,4,5,16,9
Then the function should rearrange the content of the array as 9,8,15,32,27

2 Write a function in C++ which accepts an integer array and its size as arguments and replaces elements having even values with its half and elements having odd values with twice its value

3 Write a function in C++ which accepts an integer array and its size as argument and exchanges the value of first half side elements with the second half side elements of the array.
Example : If an array of eight elements has initial content as
2,4,1,6,7,9,23,10
The function should rearrange the array as
7,9,23,10,2,4,1,6.

4   Write a function in c++ to find and display the sum of each row and each column of 2 dimensional array. Use the array and its size as parameters with int as the data type of the array.

5   Write function SORTPOINTS() in c++ to sort an array of structure Game in descending order of points using Bubble Sort
Note: Assume the following definition of structure Game
struct Game
{
       long PNo;   // Player Number
       char PName[20];
       long points;
};

6   Write a c++ function to shift all the negative numbers to left and positive number in the right side.

7   Define a function SWPCOL() in C++ to swap (interchange) the first column elements with the last column elements, for a two dimensional array passed as the argument of the function.
Example : if the two dimensional array contains

2	1	4	9
1	3	7	7
5	8	6	3
7	2	1	2

After swapping of the content of 1st and last column, it should be

9	1	4	2
7	3	7	1
3	8	6	5
2	2	1	7

8   Define a function SWPROW() in C++ to swap (interchange) the first row elements with the last row elements, for a two dimensional array passed as the argument of the function.
Example : if the two dimensional array contains

2	1	4	9
1	3	7	7
5	8	6	3
7	2	1	2

After swapping of the content of the array will be

7	2	1	2
5	8	6	3
1	3	7	7
2	1	4	9

9   Write a function in C++ to print the product of each column of a 2D integer array passed as the argument of the function
Example : if the two dimensional array contains

2	1	4	9
1	3	7	7
5	8	6	3
7	2	1	2

Then the output should appears as
       Product of Column1 = 70
       Product Column2 = 48
       Product of column3= 168
       Product of Column4=378

10   Write a function in C++ to print the product of each row of a 2D integer array passed as the argument of the function
Example : if the two dimensional array contains

2	1	4	9
1	3	7	7
5	8	6	3
7	2	1	2

Then the output should appears as
       Product of Row1 = 72
       Product Row2 = 147
       Product of Row3= 720
       Product of Row4=28

13.   Write a function which accept 2D array of integers and its size as arguments and displays the sum of elements which lie on diagonals.
[Assuming the 2D array to be a square matrix with odd dimension ie 3 x 3 , 4 x 4 etc]
Example of the array content is
5   4   3
6   7   8
1   2   9
Output through the function should be
Diagonal One Sum :   21
Diagonal Two: 11

14. Write a function in C++ which accepts a 2D array of integers and its size as arguments and displays the elements of middle row and the elements of middle column.
    [Assuming the 2D array to be a square matrix with odd dimension ie 3 x 3 , 5 x 5, 7 x 7 etc]
    Example of the array content is

    5   4   3
    6   7   8
    1   2   9

    Output through the function should be
    Middle row: 6   7   9
    Middle Column   4   7   2

15. Write a function in C++ which accepts an integer array and its size as arguments and assign the elements into a two dimensional array of integers in the following format

    | If the array is 1,2,3,4,5,6 | if the array is 1,2,3 |
    | The resultant 2D array is | The resultant 2D array is |

    | 1 2 3 4 5 6 | 1 2 3 |
    | 1 2 3 4 5 0 | 1 2 0 |
    | 1 2 3 4 0 0 | 1 0 0 |
    | 1 2 3 0 0 0 | |
    | 1 2 0 0 0 0 | |
    | 1 0 0 0 0 0 | |

16. Write a function in C++ which accepts an integer array and its size as arguments and assign the elements into a two dimensional array of integers in the following format

    | If the array is 1,2,3,4,5,6 | if the array is 1,2,3 |
    | The resultant 2D array is | The resultant 2D array is |

    | 1 2 3 4 5 6 | 1 2 3 |
    | 0 1 2 3 4 5 | 0 1 2 |
    | 0 0 1 2 3 4 | 0 0 1 |
    | 0 0 0 1 2 3 | |
    | 0 0 0 0 1 2 | |
    | 0 0 0 0 0 1 | |

17. Write a function in C++ which accepts an integer array and its size as arguments and assign the elements into a two dimensional array of integers in the following format

    | If the array is 1,2,3,4,5,6 | if the array is 1,2,3 |

    | The resultant 2D array is | The resultant 2D array is |
    | 1 0 0 0 0 0 | 1 0 0 |

```
1 2 0 0 0 0                                                    1 2 0
1 2 3 0 0 0                                                    1 2 3
1 2 3 4 0 0
1 2 3 4 5 0
1 2 3 4 5 6
```

18.   Write a user defined function named upperhalf() which takes a 2D array A,
       with size n rows and n cols as arguments and print the upper half of the
       matrix. Example

```
1 2 3                          1 2 3
6 7 8                            7 8
2 3 4                             4
```

19.   Write a user defined function lowerhalf() which takes a 2D array, with size n
       rows and n cols as argument and prints the lower half of the matrix
       Eg:-
```
1 2 3                          1
5 6 7                          5 6
9 1 2                          9 1 2
```

1   Write a function in C++ to perform a PUSH operation in a dynamically
       allocated stack considering the following:
       struct node
       {   int x,y;
               Node *Link;
       };

2   Write a function in C++ to perform a DELETE operation in a dynamically
       allocated queue considering the following description:
       struct Node
       { float U,V;
       Node *Link;
       };
       class QUEUE
       {
        Node *Rear, *Front;
       public:
       QUEUE( ) { Rear =NULL; Front= NULL;}
       void INSERT ( );
       void DELETE ( );
       ~QUEUE ( );
       };

3   Write a function in C++ to perform a PUSH operation in a dynamically
       allocated stack considering the following :
       struct Node
       {
        int X,Y;

```
Node *Link;
};
class STACK
{
Node * Top;
public:
STACK( ) { TOP=NULL;}
void PUSH( );
void POP( );
~STACK( );
};
```

4   Define function stackpush( ) to insert nodes and stackpop( ) to delete nodes,
        for a linked list implemented stack having the following structure for each
        node:
        struct Node

```
{
 char name[20];  int age;
 Node *Link;
 };
 class STACK
 {
 Node * Top;  public:
 STACK( ) { TOP=NULL;}
 void stackpush( );  void
 stackpop( );
 ~STACK( );
 };
```

1. Write SQL commands for (a) to (f) and write output for (g) on the basis of PRODUCTS relation given below:

PCODE	PNAME	COMPANY	PRICE	STOCK	MANUFACTURE	WARRANTY
P001	TV	BPL	10000	200	12-JAN-2008	3
P002	TV	SONY	12000	150	23-MAR-2007	4
P003	PC	LENOVO	39000	100	09-APR-2008	2
P004	PC	COMPAQ	38000	120	20-JUN-2009	2
P005	HANDYCAM	SONY	18000	250	23-MAR-2007	3

a) To show details of all the PC with stock more than 110.

b) To list the company which gives warranty for more than 2 years.

c) To find stock value of the BPL company where stock value is sum of the products of price and stock.

d) To show number of products from each company.

e) To count the number of PRODUCTS which shall be out of warranty on 20-NOV-2010.

f) To show the PRODUCT name which are within warranty as on date.

g). Give the output of following statement.

(i) Select COUNT(distinct company) from PRODUCT.

(ii) Select MAX(price)from PRODUCT where WARRANTY<=3

2. Write SQL commands for (i) to (viii) on the basis of relations given below:

BOOKS

book_id	Book_name	author_name	Publishers	Price	Type	qty
k0001	Let us C	Sanjay mukharjee	EPB	450	Computers	15
p0001	Genuine	J. Mukhi	FIRST PUBL.	755	Fiction	24

m0001	Mastering c++	Kanetkar	EPB	165	Computers	60
n0002	Vc++ advance	P. Purohit	TDH	250	Computers	45
k0002	Near to heart	Sanjeev	FIRST PUBL.	350	Fiction	30

ISSUED

book_id	quantity_issued
k0002	4
p0001	5
m0001	2

i. To show the books of FIRST PUBL Publishers written by P.Purohit.
ii. To display cost of all the books written for FIRST PUBL.
iii.Depreciate the price of all books of EPB publishers by 5%.
iv.To display the BOOK_NAME,price of the books whose more than 3 copies have been issued.
v.To show total cost of books of each type.
vi.To show the detail of the most costly book.

SQL Questions for practice (Unsolved)

Q1. Consider the following tables Employee and salary. Write SQL commands for the statements (i) to (iv) and give outputs for SQL queries (v) to viii

Table : Employee

Eid	Name	Deptid	Qualification	Sex
1	Deepali Gupta	101	MCA	F
2	Rajat Tyagi	101	BCA	M
3	Hari Mohan	102	B.A	M
4	Harry	102	M.A	M
5	Sumit Mittal	103	B.Tech	M
6	Jyoti	101	M.Tech	F

Table : Salary

Eid	Basic	DA	HRA	Bonus
1	6000	2000	2300	200
2	2000	300	300	30
3	1000	300	300	40
4	1500	390	490	30
5	8000	900	900	80
6	10000	300	490	89

(i) To display the frequency of employees department wise.
(ii) To list the names of those employees only whose name starts with 'H'
(iii) To add a new column in salary table . The column name is total_sal.
(iv) To store the corresponding values in the total_sal column.

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     (v)   Select name from employee where eid=(select eid from salary where basic= (select max(basic) from salary));

     (vi)   select max(basic) from salary where bonus >40;

     (vii)   Select count(*) from employee group by sex;

     (viii)   select Distinct deptid from Employee;

Q2. With reference to following relations personal and job answer the questions that follow:

Create following tables such that Empno and Sno are not null and unique, date of birth is after '12-Jan-1960' , name is never blank, Area and Native place is valid, hobby,dept is not empty, salary is between 4000 and 10000.

personal

Empno	Name	Dobirth	Native_place	Hobby
123	Amit	23-jan-1965	Delhi	Music
127	Manoj	12-dec-1976	Mumbai	Writing
124	Abhai	11-aug-1975	Allahabad	Music
125	Vinod	04-apr-1977	Delhi	Sports
128	Abhay	10-mar-1974	Mumbai	Gardening
129	Ramesh	28-oct-1981	Pune	Sports

job

Sno	Area	App_date	Salary	Retd_date	Dept
123	Agra	25-jan-2006	5000	25-jan-2026	Marketing
127	Mathura	22-dec-2006	6000	22-dec-2026	Finance
124	Agra	19-aug-2007	5500	19-aug-2027	Marketing
125	Delhi	14-apr-2004	8500	14-apr-2018	Sales
128	Pune	13-mar-2008	7500	13-mar-2028	Sales

1. Show empno, name and salary of those who have Sports as hobby.
2. Show name of the eldest employee.
3. Show number of employee area wise.
4. Show youngest employees from each Native place.
5. Show Sno, name, hobby and salary in descending order of salary.
6. Show the hobbies of those whose name pronounces as 'Abhay'.
7. Show the appointment date and native place of those whose name starts with 'A' or ends in 'd'.
8. Show the salary expense with suitable column heading of those who shall retire after 20-jan-2006.
9. Show additional burden on the company in case salary of employees having hobby as sports, is increased by 10%.
10. Show the hobby of which there are 2 or more employees.
11. Show how many employee shall retire today if maximum length of service is 20 years.
12. Show those employee name and date of birth who have served more than 17 years as on date.

13. Show names of those who earn more than all of the employees of Sales dept.
14. Show names of those who earn more than at least one of the employees of Marketing dept.
15. Increase salary of the employees by 5 % of their present salary with hobby as Music or they have completed atleast 3 years of service.

Write the output of:
1. Select distinct hobby from personal;
2. Select avg(salary) from personal,job where personal.empno=job.sno and area in('Agra','Delhi');
3. Select count(distinct Native_place) from personal.
4. Select name,max(salary) from personal,job where personal.empno=job.sno;

Now,
1. Add a new tuple in the table essentially with hobby as Music.
2. insert a new column email in job table
3. Create a table with values of columns empno,name, and hobby.
4. Create a view of personal and job details of those who have served less than 15 years.
5. Erase the records of employee from job table whose hobby is not Sports.
6. Remove the table personal.
7. Convert the following Boolean expression into its equivalent Canonical Sum of Product Form((SOP)

$$(X'+Y+Z').(X'+Y+Z).(X'+Y'+Z).(X'+Y'+Z')$$

8. Convert the following Boolean expression into its equivalent Canonical Product of Sum form (POS):
   A.B'.C + A'.B.C +A'.B.C'

9. Draw a Logical Circuit Diagram for the following Boolean Expression:
   A.(B+C')

10. Write the equivalent Boolean Expression for the following Logic Circuit
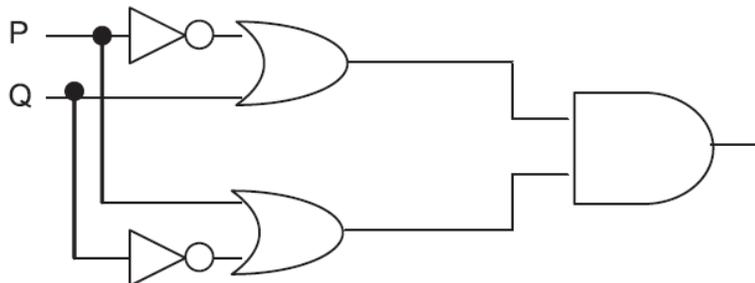
11. Write the equivalent Boolean Expression F for the following circuit diagram :
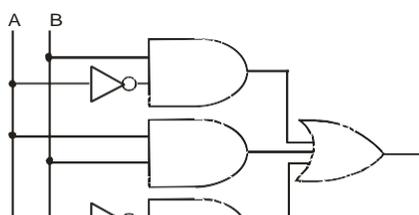
12. Write the equivalent Boolean Expression F for the following circuit diagram :
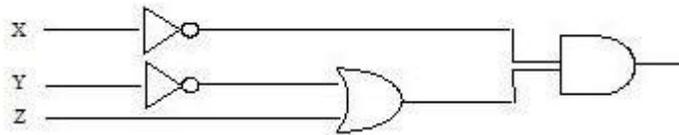
13. Write the equivalent Boolean Expression F for the following circuit diagram :
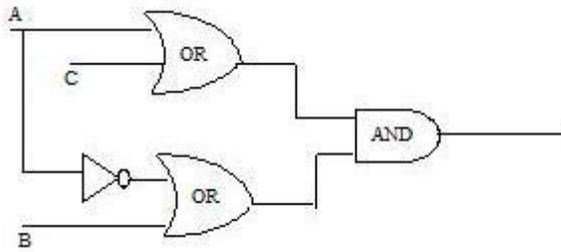
14. Prove that XY+YZ+YZ'=Y algebraically

15. Express the F(X,Z)=X+X'Z into canonical SOP form.

16. Write the equivalent Boolean Expression for the following Logic Circuit.
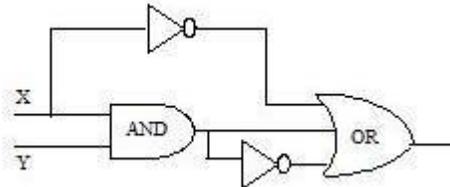
17. Interpret the following logical circuit as Boolean expression
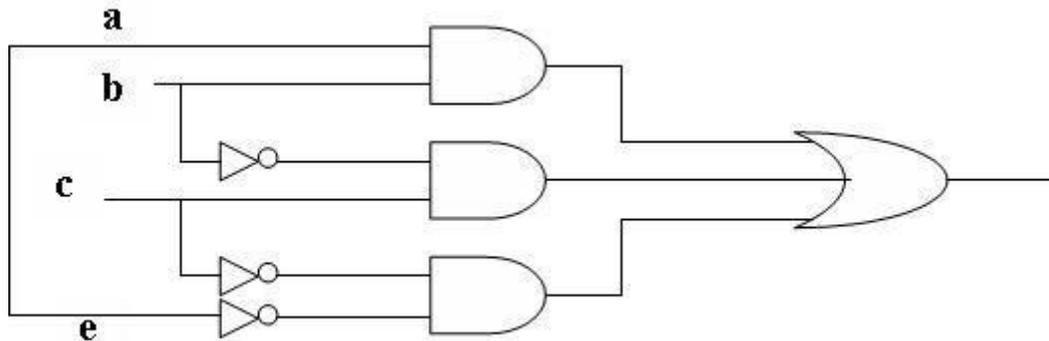
18. Design (A+B).(C+D) using NAND Gate

19. Simplify the following Boolean Expression using Boolean postulates and laws of Boolean Algebra.
    Z=(a'+a).b'.c+a.b'.c'+a.b.(c+c')

20. Prove x'.y'+y.z = x'yz+x'yz'+xyz+x'yz algebraically.

21. Prove that (a'+b')(a'+b)(a+b')=a'b'.

22. A Boolean function F defined on three input variable X,Y,Z is 1 if and only if the number of 1(One) input is odd (e.g. F is 1 if X=1,Y=0,Z=0). Draw the truth table for the above function and express it in canonical sum of product form.

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23. Reduce the following Boolean expression using K – Map
$$F(A, B, C, D) = \Sigma\ (0,2,3,4,6,7,8,10,12)$$

24. Reduce the following Boolean Expression using K-Map:
$$F(A,B,C,D) = \sum(0,1,2,4,5,6,8,10)$$

4. Reduce the following Boolean expression using K-Map :
$$F(A, B, C, D) = \pi(5,6,7,8,9,12,13,14,15)$$

5. Reduce the following Boolean expression using K-Map
$$F(U,V,W,Z) = \Sigma\ (0, 1, 2, 3, 4, 10, 11)$$

6. **Reduce the following Boolean Expression using K-Map:**
$$F(U,V,W,Z) = \Pi(0,1,2,4,5,6,8,10)$$

1   What is bleeding of signal?

2   Which communication medium is to be suggested for very effective and fast communication in guided medium?

3   In harsh industrial environment which cable would you like to use?

4   Which media have the ability to communicate over oceans?

5   What is the difference between microwave and radiowave transmission?

6   Which is the special case of microwave relay system?

7   Which transmission medium is useful for sparsely populated areas?

8   In which transmission medium Bandwidth allocation is limited?

9   What is baud?

10   Which network is easy to expand?

11   In which network there is no server?

12   In Ethernet card which connection is used for coaxial cable or twisted pair or for both?

13   Which device filter the data and which device can handle different protocol?

14   Which device do not control broadcast , filter traffic and filter collision?

15.   Which networking device is used for less no. of nodes or which is for more no. of nodes?

4 Marks Questions

Communication and Network Concepts

1.   Knowledge Supplement Organisation has set up its new center at Mangalore for its office and web based activities. It has 4 blocks of buildings as shown in the diagram below:

Center to center distances between various blocks

Black A to Block B	50 m
Block B to Block C	150 m
Block C to Block D	25 m
Block A to Block D	170 m
Block B to Block D	125 m
Block A to Block C	90 m

Number of Computers

Black A	25
Block B	50
Block C	125
Block D	10

e1) Suggest a cable layout of connections between the blocks.

e2) Suggest the most suitable place (i.e. block) to house the server of this organisation with a suitable reason.

e3) Suggest the placement of the following devices with justification

(i)   Repeater
(ii)   Hub/Switch

e4) The organization is planning to link its front office situated in the city in a hilly region where cable connection is not feasible, suggest an economic way to connect it with reasonably high speed?

2.　　　　Ravya Industries has set up its new center at Kaka Nagar for its office and web based activities. The company compound has 4 buildings as shown in the diagram below:
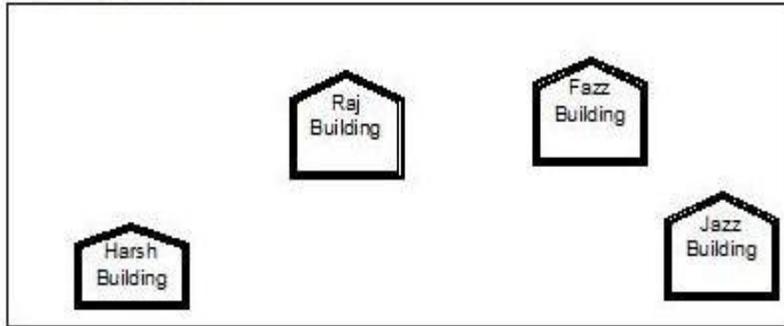
Center to center distances between various buildings is as follows:

Harsh Building to Raj Building	50 m
Raz Building to Fazz Building	60 m
Fazz Building to Jazz Building	25 m
Jazz Building to Harsh Building	170 m
Harsh Building to Fazz Building	125 m
Raj Building to Jazz Building	90 m

Number of Computers in each of the buildings is follows:

Harsh Building	15
Raj Building	150
Fazz Building	15
Jazz Bulding	25

e1) Suggest a cable layout of connections between the buildings.

e2) Suggest the most suitable place (i.e. building) to house the server of this organisation with a suitable reason.

e3)　　Suggest　the　placement　of　the　following　devices　with justification:
(i)　　Internet Connecting Device/Modem
(ii)　　Switch

e4) The organisation is planning to link its sale counter situated in various parts of the same city, which type of network out of LAN, MAN or WAN will be formed? Justify your answer.

DESIGN A PROJECT AS PER CBSE IN GROUPS(MAXIMUM TWO STUDENTS IN EACH GROUP)