SAMPLE PAPER-2013
Class-XII

Subject:- Computer Science C++

Time 3hrs **M.M 70**

Q1. A) Write short note on Conditional operator 2

Q1B) Give the Header files to run the following code. 1

```
void main()
{
char nm[20];
gets(nm);
gotoxy(10,20);
puts(nm);
}
```

Q1.C Find the Errors in the following program code and rewrite the correct code. 2

```
#Include<iostream.h>
#define max=10
void main()
{
int ar[max];
max++;
}
```

Q1d)Find the output of the following program: 3

```
#include<iostream.h>
void main()
{
int A[]={100,200,300,400,500},s=1;
int *ptr=A;
while(*ptr<500)
{
ptr++;
s=s+*ptr;
```

```
}
        cout<<++s<<" "<<s++;
        }
```

Q1e) Find the output of the following program 2

```
        #include<iostream.h>
        #include <ctype.h>
        struct fun
{
        int a,b,c;
        };
        void showd(fun &f,int x=10)
        {
        f.a+=f.a+x;
        f.b-=f.b+x;
        f.c+=f.c-x;
        }
        void main()
        {
        fun A={4,5,6},B={33,44,55};
        showd(A);
        cout<<A.a<<":"<<A.b<<"#"<<A.c;
        showd(B,12);
        cout<<B.a<<"#"<<B.b<<"@"<<B.c;
        }
```

f) WAP to generate the random number in the range 700 to 900. Thrice. **2**

Q2a) What is Abstraction illustrate with an eg. 2

Q2b) Answer the questions (i) and (ii) after going through the following class : 2

```
        class School
        {
        int rn;
        char nm[20];
        public :
        School( )
        {                                   //Function 1
```

```
    }
    School(int R,char N[])          //function 2
    {
    }
School(School &s)                   //Function 3
    {
    }
    } ;
```

(i) What type of OOP concept is illustrated by function, function2, function3 together.
(ii) (ii) What is Function 3 specifically referred as ? Write the statement to invoke function 3

2c) Define a class Cricket in C++ with following description: 4

Private Members

→Bnm of type string

→Tnm of type string

→Type of type string

→Position of type string

→Number of sixes, number of four of type int

• A member function Gettype to assign the following values for type as per the number of sixes.

Number of Sixes	Type
>=10	Hard Hitter
b/w 6-9	Hitter
b/w 2-5	General
0-1	Defensive

Public members:

1. A function InputCricket() to allow the user to enter the values for Bnm,Tnm,Position,number of sixes, number of fours and invoke gettype
   Function ShowCricket() to show all batsman Details.

Q2(d) Answer the questions (i) to (iv) based on the following : 4

```
    class Country
    {
long CID ;
    char CName[20] ;
    protected :
    char Description[40] ;
    void Allocate( ) ;
```

```
 public :
double pci;
Country( ) ;
void Input( ) ;
void Showd( ) ;
 } ;
class State :
protected Country
{
int SID ;
char Sname[20] ;
protected :
char datad[40] ;
public :
State( ) ;   void instate( ) ;  void outstate( ) ;
} ;
class Zone : public State
{
long ZID ;
char Znm[20] ;
public :
Zone( ) ;
void EnterZone( ) ;
void DisplayZone( ) ;
} ;
```

(i) Which type of Inheritance illustrated in the above C++ code ?

(ii) Write the names of members, which are accessible by objects of class type Zone.

(iii) Write the name of all the data member , which are accessible by functions of class type State.

(iv) What is the object size of class Zone.

3(a)Write a function DATACHECK(int ARR[], int Size) in C++ to check the array is ascending order, descending order or in no order the Function will return A,D or N. 3

(b)An array ar[30][20] is stored in the memory along the row with each of the elements occupying 4 bytes. Find out the memory location of ar[12l[15], if the element ar[4][10] is stored at the location 9000.3

(C)Write a function in C++ to perform Push operation in Dynamic Stack. 4

```
struct Book
```

```
{
int bno;
char bnm[20];
Book *Link;
};
```

d) Write a function CHANGEDATA( ) in C++, which accepts a 2d array of integer and its size as parameters The function will find sum of even elements on both diagonals count the common elements in both diagonal only once. 2

e) Convert the following infix expression to postfix expression 2

a+b*(c-d/e^f)/g

Q4a Write Syntax of seekg(),tellg(),seekp(),tellp() functions 1

Q4b Write a udf in c++ to find the number of lines in the file "Click.txt" that ends with 'W' Character. 2

Q4c.Write a function in C++ to search for a flats with type HIG from a binary file "flat.DAT" containing the objects of class FLATDATA (as defined below). 3

```
class FLATDATA
{
long flatno ;
char type[20];
public:
void FlatEnter ( )
{
cin>>flatno;
gets(type);
}
void FlatDisplay( )
{
cout<<flatno;
cout<<type;
}
char *retype()
{
return type;
}
};
```

Q5a) What is alternate key explain with an eg. 2

Q5b) Consider the tables FLIGHTS & FARES. Write SQL commands for the statements (i) to (vi) and give the outputs for SQL queries (vii) & (viii) .

Table : FLIGHTS

FNO	SOURCE	DEST	NO_OF_FL	NO_OF_STOP
IC301	MUMBAI	BANGALORE	3	2
IC799	BANGALORE	KOLKATA	8	3
MC101	DELHI	VARANASI	6	0
IC302	MUMBAI	KOCHI	1	4
AM812	LUCKNOW	DELHI	4	0
MU499	DELHI	CHENNAI	3	3

FARES

FNO	AIRLINES	FARE	TAX
IC301	Indian Airlines	9425	5%
IC799	Spice Jet	8846	10%
MC101	Deccan Airlines	4210	7%
IC302	Jet Airways	13894	5%
AM812	Indian Airlines	4500	6%
MU499	Sahara	12000	4%

i) Display flight number & number of flights from LUCKNOW from the table flights.

ii) Arrange the contentsof the table flights in the descending order of destination.

iii) Increase the tax by 3% for the flights starting from Delhi.

iv) write a command to create the fare table.

v)insert a new record in the fare table.

vi) to display fno,source,dest,airlines from both tables.

Give The outputs

vii)SELECT COUNT(DISTINCT SOURCE) FROM FLIGHTS;

viii) SELECT FNO, NO_OF_FL, AIRLINES FROM FLIGHTS,FARES WHERE SOURCE='DELHI' AND FLIGHTS.FNO=FARES.FNO;

6.(a) State and VerifyDemorgan's Theorem algebraically. 2

(b) Draw the circuit using NOR gates only (a+b').(b'+c) 2

(c) Write the SOP,POS form of a Boolean function F, which is represented in a truth

table as follows: 1

A	B	C	F
0	0	00	
0	0	1	0
0	1	0	1
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	1

(d) Reduce the following Boolean Expression using K-Map : F(A, B, C, D) = ∑ (0, 1,2, 4, 5, 6, 8,9,11,12,15)

Q7(a) What is circuit and packet switching 1

(b)Give two eg of browsers 1

(c) What is XML ? 1

d) give full form of TCP/IP and EDGE.

(e) "Learn Together" is an educational NGO. It is setting up its new campus at Jabalpur for its webbased activities. The campus has 4 compounds as shown in the diagram below:

4

center to center distance between various Compounds as per architectural drawings(in meter) is as follows:

Main Compound to Resource Compound 110 m

Main Compound to Training Compound 115 m

Main Compound to Finance Compound 35m

Resource Compound to Training Compound 25 m

Resource Compound to Finance Compound 135 m

Training Compound to Finance Compound 100m

Expected Number of Computer in each Compound is as follows:

Main Compound 5 Resource Compound 15 Training Compound 150 Finance Compound 20

(e1) Suggest a cable layout of connection between the compounds.

(e2) Suggest the most suitable place (i.e., compound) to house the server for this NGO. Also provide a suitable reason for your suggestion.

(e3) Suggest the placement of the following devices with justification:
(i) Repeater (ii) Hub/switch

(e4) The NGO is planning to connect its International office situated in Mumbai, which out of following wired communication link, you will suggest for a very speed connectivity ?: (i) Telephone Analog Line (ii) Optical Fiber (iii) Ethernet Cable