Sample Paper 2015
Class- XII
Subject –Computer Science

Time 3hrs   **M.M 70**

Q1. A) Write short notes on typedef and #define.   2

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

```
void main()

{

cout<<"Click 2 Win";

cout<<setw(9)<<"hello";

}
```

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

```
Include<iostream.h>

class bank

{

int acno;

char nm[20];

float balamt;

void bank()

{

}

void input()

{

cout<<"Enter the acno ";

cin>>acno;

}

}
```

```
void Main()

{

bank b;

input.b();

}
```

Q1d)Find the output of the following program: 3

```
#include<iostream.h>

void main()

{

int X[]={30,35,50,66,110};

int *p=X;

while(*p<110)

{

if(*p%3!=0)

*p=*p+1;

else

*p=*p+2;

p++;

}

for(int I=4;I>=1;i--)

{

cout<<X[I]<<"*";

if(I%3==0) cout<<endl;

}

cout<<X[0]*3<<endl;   }
```

Q1e) Find the output of the following program   **2**

```
#include<iostream.h>
#include <ctype.h>
```

```
void CangeIt (char Text[], char C)
{

for (int K=0;Text [K]!='\0' ;K++)
{ if (Text[K] >='F' && Text[K] <='L')
          Text[K]=tolower(Text[K]);
else if (Text[K]=='E' || Text[K]=='e')
          Text[K]=C; else if (K%2==0)

Text[K]=toupper(Text[K]);

Else

Text[K]=Text[K-1];

}

}

void main( )
{

char oldText[ ]= "Click@CAreeR2013" ;

ChangeIt (oldText,'%');

cout <<"New TEXT:"<<oldText<<endl;

}
```

f) The following code is from a game .which generates a set of 4random numbers :identify the correct option(s)out of the four choices given below as the possible set of such numbers generated from the program code so that he wins the game. Justify your answer.

```
        2#include <iostream.h>
#include <stdio.h>
const int LOW = 15 ;
void main( )

 {

randomize( ) ;

int POINT =5, Number ;

for (int I = 1 ; I <= 4 ; I ++)
{

Number = LOW + random(POINT) ;

cout << Number << ":" ;
```

POINT-- ;

}

}

(i)   19:16:15:18: (ii)   14:18: 15:16: (iii)   19:16:14:18: (iv) 19:16:15:16

Q2a) What is static Data member Explain with an eg.

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

```cpp
class TEST
{
int Regno, Max, Min, Score ;
public :
TEST( )  //Function 1
Regno = 101 ; Max=100; Min = 40 ; score = 75 ;
}
TEST(int Pregno, int Pscore)       //Function 2
{
Regno = Pregno ;
 Max = 100 ;
 Min = 40 ;
 Score = Pscore ;
}
~TEST( )//Function 3
{
cout << "TEST Over" << endl ;
}
void Display( )    //Function 4
{
cout << Regno << ":" <<Max<< ":" << Min << endl ; cout << "[Score]" << Score << endl;
}
} ;
```

   (i)   What type of function 4 is and how it will be invoked
   (ii)   (ii) What is Function 3 specifically referred as ? When do you think, Function 3 will be invoked/called?

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

Private Members

• FoodCode of type int

• Food of type string

• Ftype of type string

• Sticker of type string

• A member function Getsticker to assign the following values for Sticker as per the given Ftype:

Ftype	Sticker
Vegetarian	green
Contains egg	yellow
Nonvegetarian	red

Public members

A function GetFood() to allow the user to enter the values for Foodcode, food,ftype and call Function GetSticker() to assign Sticker.

A function ShowFood() to allow the users to view the contents of all the data members.

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

```cpp
class Chairperson
{
long CID ;          //Chairperson Identification Number
char CName[20] ;
protected :
char Description[40] ;     void Allocate( ) ;
 public :
Chairperson( ) ;  void Assign( ) ;
void Show( ) ;
 } ;
class Director
{
int DID ;//Director ID
char Dname[20] ;
protected :
char Profile[30] ;
public :
Director( ) ;   void Input( ) ;  void output( ) ;
} ;
class Company : private Chairperson, public Director
{
int CID ; //Company ID
char City[20] , Country[20] ;
public :
Company( ) ;
void Enter( ) ;
void Display( ) ;
} ;
```

(i) Which type of Inheritance out of the following is specifically is illustrated in the above C++ code ?

(a) Single Level Inheritance   (b) Multi Level Inheritance

(c) Multiple Inheritance

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

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

(iv) Write the names of all members, which are accessible from member functions of

class Director.

3(a)Write a function SWAP2BEST (int ARR[], int Size) in C++ to modify the content of the array in such a way that the elements, which are multiples of 10 swap with the value present in the very next position in the array.
For example :
If the content of array ARR is
80, 66, 45, 20, 44, 54
The content of array ARR should become
56, 80, 45, 44, 20, 54
(b)An array T[20][10] is stored in the memory along the column with each of the elements occupying 2 bytes. Find out the memory location of T[10l[15], if the element T[3][9] is stored at the location 7800.
(C)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).

```
Struct BOOK
{
int bookno;
char Title[20];
};
```

d) Write a function CHANGE( ) in C++, which accepts a 2d array of integer and its size as parameters and divide all those array elements by 7 which are not in the range 70 to 700 and find the square root of all other elements.   **2**

e) evaluate the following postfix expression   2

2,3,^,4,5,-,6,*,/

Q4a write a statement using seekg,tellg, seekp, tellp to set the position of reading object after the 5th object of the class BANK. Write the second statement to find the byte position after writing the 5th object.

Q4b Write a udf in c++ to find the count the middle character of the words in text file "MYDATA.txt"

Having value 'D' or 'd'.

Q4c.

(c) Write a function in C++ to search for a laptop from a binary file "LAPTOP.DAT" containing the objects of class LAPTOP (as defined below). The program will display the records having RAM >2.

class LAPTOP

{

long ModelNo; float RAM, HDD; char Details[120];
 public:

void StockEnter ( ) {cin>>Model No>>RAM>>HDD; gets(Details);}

```
void StockDisplay( ){cout<<ModelNo<<RAM<<HDD<<Details<<endl;}

float myLapTopRAM()

return RAM};

};
```

Q5a) What is cardinality and degree explain with an eg.   2

Q5b)

Consider the following tables WORKER and PAYLEVEL and answer (b) and (c)

parts of this question:

Table: WORKER

ECODE	NAME	DESIG	PLEVEL	DOJ	DOB
11	Radhey Shyam	Supervis	P001	13-Sep-2004	23-Aug-1981
12	Chander Nath	Operator	P003	22-Feb-2010	12-Jul-1987
13	Fizza	Operator	P003	14-Jun-2009	14-Oct-1983
15	Ameen Ahmed	Mechanic	P002	21-Aug-2006	13-Mar-1984
18	Sanya	Clerk	P002	19-Dec-2005	09-Jun-1983

Table: PAYLEVEL

PLEVEL	PAY	ALLOWANCE
P001	26000	12000
P002	22000	10000
P003	12000	6000

(b)Write SQL commands for the following statements: 6

(i) To display the details of all WORKERs, descending order of DOB.

(ii) Write a command to delete the records of workers having name starts with 'F'.

(iii)Write a command to modify the records of by adding their pay by 1000 having allowance >10000.

(iv) To add a new row with the following :

19 "Kishore", "Operator", "P003". "19-Jun-2008", "11-Jul-1984"

v) write a command to display the name, designation of workers having pay+allowance <30000

vi) write a command to delete all the records of worker table with all its contents and structure.

(c)Give the output of the following SQL queries : 2

(i) SELECT COUNT (PLEVEL), PLEVEL FROM WORKER GROUP BY PLEVEL;

(ii) SELECT MAX(DOB), MIN(DOJ) FROM WORKER;

(iii) SELECT Name, Pay FROM WORKER W, PAYLEVEL P WHERE W.PLEVEL = S.PLEVEL AND P.ECODE<13;

(iv) SELECT PLEVEL, PAY+ALLOWANCE FROM PAYLEVEL WHERE PLEVEL = 'P003';

6.(a) State and Verify Absorption law algebraically.

2

(b) Draw the circuit using nand gates only a'.b+b'c+c'd

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

table as follows: 1

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

(d) Reduce the following Boolean Expression using K-Map : $F(M, N, O, P) = \sum (0, 1,2,3, 4, 5, 6, 8, 12,15)$

3

7.(a) What is bandwidth and baud. 1

(b)Differentiate between client and server script 1

(c) What is CDMA ? 1

d) give any 2 examples of hacking for fun 1

(e) Quick Learn University is setting up its Academic blocks at Prayag Nagar and planning to set up a network. The university has 3 academic blocks and one Human Resource Center :

4

center to center distances between various block/center is as follows :

Law Block to Business Block	40 m
Law Block to Technology Block	80 m
Law Block to HR Center	105 m
Business Block to Technology Block	30 m
Business Block to HR Center	35 m
Technology Block to HR Center	15 m

Number of Computers in each of the Blocks / Center is follows :

Law Block	15
Technology Block	40
HR Center	115
Business Block	25

(e1) Suggest the most suitable place (i.e. Block / Center) to install the server of this university with a suitable reason.

(e2) Suggest an ideal layout for connecting these blocks/center for a wired connectivity.

(e3) Which device you will suggest to be placed/ installed in each of these blocks/center to efficiently connect all the computers with in these blocks / center

(e4) The university is planning to connect its admission office in the closest big city, which type of network out of LAN, MAN or WAN will be formed? Justify your answer.