CBSE PREVIOUS YEAR QUESTION BANK

QNO 1 (a)

1 (a) Define the following terms: 2

(i) Inheritance (ii) Encapsulation 1998 Delhi Board

1(a) Differentiate between a Run Time Error and Syntax Error. Also give suitable examples of each in C++. 2

Sample Paper I 1998

1. (a) Write two major difference between Object Oriented Programming and Procedural Programming? 2

Sample Paper Set II 1998

1 (a) Why main function is special? Give two reasons 2

1999 Delhi Board

1(a) Write two advantages of using include compiler directive? 2

1999 Outside Delhi

1 (a) Illustrate the concept of function overloading with the help of an example.

2000 Delhi Board 2

1 (a) Illustrate the concept use of this pointer with the help of an example.

2000 Outside Delhi Board 2

1 (a) Illustrate the concept of function overloading with the help of an example.

Compartment 2000 2

1 (a) Encapsulation is one of the major properties of OOP. How is it implemented in C++? 2

2001 Delhi Board

1(a) Reusability of classes is one of the major properties of OOP. How it is implemented in C++? 2001 Outside Delhi 2

1 (a) What the purpose of a header file in a program? 2

2002 Delhi Board

1 (a) illustrates the concept of inheritance with the help of an example?

2002 Outside Delhi Board 2

1. (a) What is the difference between call by value and call by reference? Give an example in C++ to illustrate the same Delhi Board 2003 2

1. (a) What is the difference between Local Variable and Global Variable? Also, give a suitable C++ code to illustrate same. Outside Delhi Board 2003 2

1. (a) What is the difference between Local Variable and Global Variable? Also, give a suitable C++ code to illustrate same. Compartment 2003 2

1 (a) What is inheritance? Give an example in C++ to show its implementation in C++ 2004 Delhi Board 2

1. (a) What is polymorphism ? Give an example in C++ to show its implementation in C++. 2004 Outside Delhi Board 2

1. (a) What is polymorphism ? Give an example in C++ to show its implementation in C++. 2004 Compartment 2

1. (a) What is the difference between call by value and call by reference? Give an example in C++ to illustrate the same Delhi Board 2005 2

1.(a) Differentiate between a default constructor and copy constructor, using suitable examples of each Outside Delhi Board 2005 2

1. (a) What are the advantages of Object Oriented Programming over Procedural Programming? Compartment 2005 2

1. (a) Name the header file to which the following belong: 1

(i) abs( )
(ii) isupper( ) 2006 Delhi

1. (a) Name the header file to which the following belong : 1

(i) pow() (ii) random() 2006 OD

1. (a) Name the header file to which the following belong : 1

(i) gets() (ii) open() Compartment 2006

1. (a) Differentiate between a Run Time Error and Syntax Error. Also give suitable examples of each in C++. 2007 Delhi 2

1. (a) Differentiate between a Logical Error and Syntax Error. Also give suitable examples of each in C++. 2007 Outside Delhi 2

1. (a) What is the difference between #define and const? Explain with suitable example. 2008 D 2

1.(a) What is the difference between type casting and automatic type conversion? Explain with suitable example. Compartment 2008 2

1(a) What is the purpose of using a typedef command in C++. Explain with suitable example. 2008 OD 2

1. (a) What is the difference between call by value and call by reference? Give an example in C++ to illustrate both. 2009 D 2

1. (a) What is the difference between Actual Parameter and Formal Parameter? Give an example in C++ to illustrate both types of parameters. 2009 OD 2

1.(a) What is the function of #define keyword? Give an example to illustrate its use. Compartment 2009 2

1. (a) What is the difference between automatic type conversion and type casting? Also, give a suitable C++ code to illustrate both. 2010 D 2

1. (a) What is the difference between call by value and call by reference? Give an example in C++ to illustrate both. 2010 OD 2

1. (a) What is the difference between Local Variable and Global Variable? Also, give a suitable C++ code to illustrate both. 2011 D 2

1. (a) What is the difference between automatic type conversion and type casting? Also, give a suitable C++ code to illustrate both. 2011 OD 2

1. (a) What is the difference between Global Variable and Local Variable? 2
Sample Paper Set I 2009

1. (a) What is the difference between Object Oriented Programming and Procedural Programming? Sample Paper Set II 2009 2

1. (a) What is the difference between Global Variable and Local Variable? 2
(Sample Paper Set I 2010 (Repeated in Sample Paper Set 1 2009))

1 (a) What is the difference between Actual Parameter and Formal Parameters ? Also, give a suitable C++ code to illustrate both.
Sample Paper Set II - 2010 (asked in 2009 OD) 2

1 (a) Differentiate between the post-increment and pre-increment operators. Also, give suitable C++ code to illustrate both. 2
Sample Paper Set I - 2012

1 (a) What is the difference between Actual Parameter and Formal Parameters? Also, give a suitable C++ code to illustrate both. 2
Sample Paper Set II - 2012 (asked in 2009 OD and Sample Paper 2010 Set II)

1. (a) What is the difference between automatic type conversion and type casting? Also, give a suitable C++ code to illustrate both. 2
2012 OD (Repeated, asked in the year 2010 Delhi Paper)

QNO 1 (b)

1 (b) Name the header file, to which following built-in function belong to:
(i) cos() (ii) setw() (iii) toupper() (iv) strcpy() 1
1998 Delhi Board

1(b) Name the header files of C++ to which the following functions belong: 1
(i) strcat () (ii) scanf () (iii) getchar() (iv) clrscr () 1999 Delhi Board

1(b) Name the header file, to which following built-in functions belong:
(i) isupper() (ii) setw() (iii) exp() (iv) strcmp() 1
2000 Delhi Board

1 (b) Name the header file to be included for the use of following built-in functions: 1
(i) frexp() ii) toupper() 2001 Delhi Board

31
1(b) Name the header files C++ to which the following functions belong: 1
(i) write() (ii) arc(iii) open() (iv) strlen() 2002 Delhi Board

32
(b) Write the names of the header files to which the following belong : 2
(i) getst( ) (ii) strcmp( ) (iii) abs( ) (iv) isalnum( ) 2004 Delhi Board

33
1(b) Illustrate the use of #define in C++ to define a macro. 2
2006 Delhi

34
1(b) Illustrate the use of inline function in C++ with the help of an example. 2
2006 Outside Delhi

35
1(b) Name the header file(s) that shall be needed for successful compilation of the following C++ code : 1
2007 Delhi

```
void main( )
{
char Text[40];
strcpy(Text, ”AISSCE”);
puts(Text);
}
```

36
1(b) Name the header file(s) that shall be needed for successful compilation of the following C++ code. 1
2007 Outside Delhi

37
1(b) Name the header files that shall be needed for the following code
1
2008 Delhi

```
void main ( )
{
char String [ ] = “Peace”;
cout<<setw (20) << String;
}
```

38
1 (b) Name the header files that shall be needed for the following code: 1
2008 Out side Delhi

```
void main ( )
{
char Word [ ] =”Exam”;
cout<<setw(20)<<Word;
}
```

39
1 (b) Write the names of the header files to which the following belong: 1
(i) puts( ) (ii) sin( ) 2009 Delhi

40
1 (b) Write the names of the header files to which the following belong: 1
(i) setw( ) (ii) sqrt( ) 2009 Outside Delhi

41
1 (b) Which C++ header file(s) will be essentially required to be included to run/execute the following C++ code? 1
2010 Delhi

```
void main( )
{
int Eno=123, char Ename[ ]=”Rehan Swamp”;
cout<<setw(5)<<Eno<<setw(25)<<EName<<endl;
}
```

42
1(b) Which C++ header file(s) will be essentially required to be included to run/ execute the following C++ code: 1
2010 Outside Delhi

```
void main()
{
int Rno=24; char Name[] =”Amen Singhania”;
cout<<setw(lO)<<Rno<<setw(20)<<Name<<endl;
}
```

43
1(b) Write the names of the header files, which is/are essentially required to run/ execute the following C++ code: 1
2011 Delhi

```
void main ( )
{
char C, String [ ] = "Excellence Overload";
for (int I=0; String [ I ] ! = '\ 0'; I ++ )
if (String [I] ==' ')
cout<<end1;
else
{
C=toupper(String[I]);
cout<<C ;
}
}
```

44
(b) Write the names of the header files, which is/are essentially required to run/ execute the following c++ code: 1
2011 Outside Delhi

```
void main ( )
{
char CH,Text[ ] ="+ve Attitude";
for (int I=0 ; Text[I] ! ='\0' ;I++)
if (Text[I]== ' ')
cout<<end1;
else
{
CH=toupper (Text [I]) ;
cout<<CH;
}
}
```

45
1(b) Write the names of the header files to which the following belong: 1
(i) strcmp() (ii) fabs() Sample paper 2009 Set I

46
1(b) Write the names of the header files to which the following belong: 1
Sample paper 2009 Set II
(i) frexp() (ii) isalnum()

47
1 (b) Which C++ header file(s) will be essentially required to be included to run / execute the following C++ code: 1
2010 Sample Paper Set I

```
void main()
{
char Msg[ ]="Sunset Gardens";
for (int I=5;I<strlen(Msg);I++)
puts(Msg);
}
```

48
(b) Write the names of the header files to which the following belong: 1
2010 Sample Paper Set II (Repeated in Sample paper 2009 Set II)
(i) frexp() (ii) isalnum()

49
(b) Which C++ header file(s) are essentially required to be included to run/execute the following C++ code: 1
Sample paper 2012 Set I

```
void main ( )
{
int Last =25 ;
for ( int C=9 ; C <= Last ; C ++ )
cout<< C << " : " <<sqrt ( C ) <<endl;
}
```

50
(b) Write the names of the header files to which the following belong: 1
2010 Sample Paper Set II
(i) exp() (ii) strcmpi()

51
(b) Which of the header file(s) are essentially required to be included to run / execute the following C++ source code. (Note: Do not include any header file which is / are not required) 1

2012 Outside Delhi

```
void main ( )
{
char TEXT [ ] = “Something” ;
cout<< “Remaining SMS Chars : “
<< 160-strlen(TEXT)<<endl;
}
```

QNO 1 (c)

52
1(c) Find the syntax error, if any, in the following program 2

1998 Delhi Board

```
#include <iostream.h>
void main()
{
int R;W = 90;
while W > 60
{
R = W- 50;
switch(W)
{ 20:cout << "Lower Range"<<endl;
30:cout<< "Middle Range"<< endl;
40: cout<< "Higher Range"<<endl;
}
}
}
```

53
1(c) Find the syntax error (s), if any, in the following program: 2

1999 Delhi Board

```
# include <iostream.h>
main()
{
int x[5], *y,z[5]:
for (i = 0; i < 5; i++)
{
x[il=I;
z[i] = i+3;
y = z;
x = y;
}
}
```

54
1(c) Will the following program execute successfully? If no, state the reason (s). 2
2000 Delhi Board

```
#include<stdio.h>
void main ()
{
int s1, s2, num;
s1 = s2 = 0;
for (x = 0; x<11; x++)
{
cin << num;
if (num>0)
s1 += num;
else
s2 = /num;
}
cout << s1 << s2;
}
```

55
1(c) Identify the syntax error (s), if any (giving reason for error) 2
2001 Delhi Board

```
class ABC
{
int x = 10;
float y;
ABC ()
{ y = 5;}
~ ABC(){}
};
void main ()
{
ABC al,a2;
}
```

56
1(c) Find the syntax error(s), if any, in the following program: 2
2002 Delhi Board

```
# include <iostream.h>
void main()
{
int x;
cin<< x;
for(int y = 0; y<10; y++);
cout>>x + y;
}
```

57
1 (c) Rewrite the corrected code for the following program. Underline each correction (if any) 3.
2004 Outside Delhi

```
#include <iostream.h>
structure Supergym
{
int member number;
char membername[20];
char membertype[] = “HIG”;
};
void main()
{
Supergym personl, person.2;
cin<<“Member Number:”;
cin>>personl.membernumber;
cout<<“Member Name :“;
cin>>personl.membername;
personl.member type = “MIG”;
person2 = personl;
cin<<“Member Number:“<<person2.membernumber;
cin<<“Member Name”<<person2.membername;
cin<<“Member Number:“<<person2.membertype;
}
```

58
1(c) Rewrite the following program after removing the syntactical error(s), if any. Underline each correction. 2
Delhi 2006

```
#include<iostream.h>
void main( )
{ struct STUDENT
{ char stu_name[20];
char stu_sex;
int stu_age=17;
} student;
gets(stu_name);
gets(stu_sex);}
```

59
1(c) Rewrite the following program after removing the syntactical error(s), if any. Underline each correction. OD 2006 2

```
#include <idstream.h>
void main()
{ struct movie
{ char movie_name[20];
char movie_type;
int ticket_cost = 100
}MOVIE;
gets(movie_name);     gets(movie_type);      }
```

60
1(c) Rewrite the following program after removing the syntactical error(s), if any. Underline each correction. Delhi 2007 2

```
#include <iostream.h>
const int Size 5;
void main()
{
int Array[Size];
Array = {50,40,30,20,10};
for(Ctr=0; Ctr<Size; Ctr++)
cout>>Array[Ctr];
}
```

61
1(c) Rewrite the following program after removing the syntactical error(s) if any. Underline each correction. OD 2007 2

```
# include <iostream.h>
const int Max 10;
void main ( )
{
int Numbers [Max];
Numbers = { 20, 50,10, 30,40 } ;
for (Loc= Max-1 ; Loc > = 0 ; Loc - -)
cout>>Numbers [Loc];
}
```

62
1(c) Rewrite the following program after removing the syntactical error(s) if any. Underline each correction. Delhi 2008 2

```
#include < iostream.h >
void main ( )
{
First = 10, Second = 20;
Jumpto (First; Second);
Jumpto (Second);
}
void Jumpto (int N1, int N2=20)
{
N1 = N1 + N2;
cout<<N1>>N2;
}
```

63
1(c) Rewrite the following program after removing the syntax error(s), if any. Underline each correction. OD 2008 2

```
#include <iostream.h>
void main ( )
{
One = 10, Two = 20;
Callme (One;Two) ;
Callme (Two) ;
}
void Callme (int Arg1, int Arg2=20)
{
Arg1 = Arg1 + Arg2;
cout<<Arg1>> Arg2;
}
```

64
1(c) Rewrite the following program after removing the syntactical errors (if any). Underline each correction.
Delhi 2009 2

```
#include [iostream.h]
#include [stdio.h]
class Employee
{
int EmpId = 901;
char EName [20] ;
public
Employee ( ) { }
void Joining () {cin>>EmpId; gets (EName);}
void List ( ) {cout<<EmpId<<“ : ”<<EName<<endl;}
} ;

void main ( )
{
Employee E ;
Joining.E ( ) ;
E. List ( )
}
```

65
(c) Rewrite the following program after removing the syntactical errors (if any).Underline each correction.
Outside Delhi 2009 2

```
include <iostream.h>
include <stdio.h>
class MyStudent
{

int StudentId = 1001;
char Name [20] ;
```

```
public
MyStudent( ){ }
void Register ( ) {cin>>StudentId; gets (Name) ;}
void Display ( ) {cout<<StudentId<< ":" <<Name<<end1;}
} ;

void main ( )
{
MyStudent MS ;
Register.MS( ) ;
MS.Display( ) ;
}
```

66
1(c) Rewrite the following c++ program code after removing the syntax error(s) (if any). Underline each correction. Delhi 2010 2

```
include <iostream.h>
class TRAIN
{
long TrainNo;
char Description[25];
public
void Entry ( )
{
cin >>TrainNo; gets(Description);
}
Void Display ( )
{
cout<<TrainNo<<":"<<Description<<endl;
}
};

void main( )
{
TRAIN T;
Entry. T( ); Display. T( );
}
```

67
1(c) Rewrite the following C++ program code after removing the syntax error(s) (if any). Underline each correction. OD 2010 2

```
include <iostream.h>
class FLIGHT
{
long FlightCode;
char Description[25];
public
void AddInfo()
{
```

```
cin>>FlightCode; gets (Description) ;
{
void ShowInfo()
(
cout<<FlightCode<<":"<<Description<<endl;
}
} ;

void main()
{
FLIGHT F;
AddInfo.F(); ShowInfo.F();
}
```

68

1(c) Rewrite the following program after removing the syntactical errors (if any). Underline each correction. Delhi 2011 2

```
#include[iostream.h]
typedef char Text(80) ;
void main ( )
{
Text T= "Indian";
int Count=strlen(T) ;
cout<<T<<'has'<<Count<< 'characters' <<end1;
}
```

69

1(c) Rewrite the following program after removing the syntactical errors (if any). Underline each correction. OD 2011 2

```
include<iostream.h>
typedef char [80] String;
void main ( )
{
String S= "Peace";
int L=strlen(S) ;
cout<<S<< 'has'<<L<< 'characters'<<end1;
}
```

70

1(c) Rewrite the following program after removing the syntactical errors (if any). Underline each correction. Sample Paper Set I 2009 2

```
#include [iostream.h]
class PAYITNOW
{
int Charge;
PUBLIC:
  void Raise(){cin>>Charge;}
  void Show{cout<<Charge;}
};
void main()
```

```
{
PAYITNOW P;
P.Raise();
Show();
}
```

71
1(c) Rewrite the following program after removing the syntactical errors (if any). Underline each correction. Sample Paper Set II 2009 2

```
#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);
}
```

72
1(c) Rewrite the following program after removing the syntactical errors (if any). Underline each correction. Sample Paper Set I 2010 2

```
#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();
}
```

73
(c) Rewrite the following program after removing the syntactical errors (if any). Underline each correction. SP 2010 2

```
#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);
}
```

74 Sample Paper Set I 2012

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

```
#include {iostream.h}
CLASS User
{
long Userid;char Gender;
public:
void Authorize{cin>>Userid>>Gender;}
void Show(){cout<<Userid<<":"<<Gender<<endl;}
};
void main()
{
User U;
U.Authorize();
Show();
}
```

75 Sample Paper Set II 2012

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

```
#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);
}
```

76 2012 Outside Delhi

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

```
#include <iostream.h>
Class Item
{
   long IId,Qty;
public:
   void Purchase{cin>>IId>>Qty;}
   void Sale()
   {
      cout<<setw(5)<<IId<<" Old:"<<Qty<<endl;
      cout<<"New:"<<--Qty<<endl;
   }
};
void main()
{
   Item I;
   Purchase();
   I.Sale();
   I.Sale()
}
```

QNO 1(d)

78

1(d) Give the output of the following program segment: 3
1998 Delhi

```
void main()
{
char *NAME = "IntRAneT";
for (int x = 0; x<strlen(NAME);x++)
if(islower(NAME))
NAME[x]=toupper(NAME[x]);
else
if (isupper(NAME[x]))
if (x%2==0)
NAME[x]=tolower(NAME[x]);
else
NAME [x] = NAME[x - 1];
puts(NAME);
}
```

79

1(d) Give the output of the following program: 3
1999 Delhi

```
# include <stdio.h>
void main()
{
char *p = "Difficult";
char c;
c = *p++;
printf("%c",c);
}
```

80

1 (d) Give the output of following program segment (Assuming all required header files are included in the program). 3
2000 Delhi

```
void main()
{
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;
}
```

81
1(d) Give the output of the following program (Assuming all required header files are included in the program) : 3
2001 Delhi

```
void main()
{
int array[]={2,3,4,5};
int *arptr = array;
int value = *arptr;
cout << value << „\n';
value = *arptr++;
cout<< value <<"\n";
value = *arptr;
cout << value << „\n";
value = *++arptr;
cout << value << „\n';
}
```

82
1(d) Find the output of the following program: 3
2002 Delhi

```
void main()
{
int x=5,y=5;
cout << x++;
cout<<",";
cout<<++x;
cout<< ",";
cout << y++<<”,”<<++y;
}
```

83
1(d) What will be the output of the following program : 2
2004 Delhi

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

void ChangeString(char Text[], int &Counter)
{
char *Ptr = Text;
int Length = strlen (Text);
```

```
for ( ;Counter<Length-2; Counter+=2, Ptr++)
{
* (Ptr + Counter) = toupper( * (Ptr + Counter) );
}
}
void main()
{
clrscr();
int Position = 0;
char Messaget[] = “Pointers Fun”;
ChangeString (Message, Position);
cout<<Message<<“ @ “<<Position;
}
```

84

1. (d) Find the output of the following program : 3

Delhi 2006

```
#include<iostream.h>
#include<string.h>
class state
{
char *state_name;
int size;
public:
state( ); { size=0; state_name=new char[size+1]; }
state(char *s)
{ size = strlen(s) ; state_name = new char[size+1];
strcpy(state_name,s);
}
void display( ) {cout<<state_name<<endl;}
void Replace (state & a, state & b)
{ size = a.size + b.size;
delete state_name;
state_name = new char[size+l];
strcpy(state_name, a.state_name);
strcat(state_name, b.state_name);
}
};
void main( )
{ char * temp = “Delhi”;
state state1 (temp), state2(“Mumbai”), state3(“Nagpur”), S1, S2;
S1.Replace(state1, state2);
S2. Replace(S1, state3);
S1.display( );
S2.display( );
}
```

85

1(d) Find the output of the following program : OD 2006 3

```
#include<iostream.h>
#include<string.h>
class student
{
char *name;
int l;

public:

student() { l=0; name=new char[1+1]; }

student(char *s)
{
 l=strlen(s); name=new char[1+1];
strcpy (name,s);
}

void display() { cout<<name<<endl;}

void manipulate(student & a, student & b)
{ l =a.l + b.l;
delete name;
name=new char[l+l];
strcpy(name, a.name);
strcat(name, b.name);
}
};

void main()
{
char * temp ="Jack";
student name1(temp), name2(" Jill"), name3(" John" ),S1,S2;
S1.manipulate(name1,name2);
S2.manipulate(S1,name3);
S1.display();
S2.display();
}
```

86

1(d) Find the output of the following program : Delhi 2007 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;
}
```

87

1(d) Find the output of the following program : OD 2007 2

```
# include < iostream.h>
void main ()
{
intArray[] = {4,6,10,12};
int *pointer = Array ;
for (int I=1 ; I<=3 ; I++)
{
cout<<*pointer<<#”;
pointer ++;
}
cout<<endl;
for (I=1 ; I<=4 ; I++)
{
(*pointer)*=3 ;
-- pointer;
}
for(I=l; I<5; I + + )
cout << Array [I-1] << “@”;
cout << endl;
}
```

88

1(d) Find the output of the following program: Delhi 2008 3

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

void main ( )
{

char Text [ ] = “Mind@Work!”;
```

```
for (int I = 0; Text (I)! = '\0'; 1++)
{
if (!isalpha (Text[I]))
Text [I] = '*';
else if (isupper (Text[I]))
Text [I] = Text [I] + 1 ;
Text [I] = Text [I] + 1 ;
else
Text (I) = Text [I+ 1];
}
cout<<Text;
}
```

89

1(d) Find the output of the following program : OD 2008 3

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

void main ( )
{
char Mystring[ ] ="What@OUTPUT!" ;
for(int I = 0; Mystring [I] ! =' \0'; I++)
{
if (!isalpha (Mystring[I]))
Mystring [I] = '*';
else if (isupper (Mystring[I]))
Mystring [I] = Mystring[I] +1;
else
Mystring [I] = Mystring [I+1];
}
cout<<Mystring;
}
```

90

1(d) Find the output of the following program : Delhi 2009 3

```
#include<iostream.h>
void main ( )
{
int X[ ] = {10, 25, 30, 55, 100};
int *p = X ;
while ( *p < 110)
{
if (*p%3 ! = 0)
*p = *p + 1 ;
else
*p = *p + 2 ;
p++;
}
```

```
for(int I = 4 ; 1>= 1 ; I - -)
{
cout << X[I] << “*” ;
if ( I%3 = = 0) cout<<endl ;
}
cout<<X[0]*3<<endl ;
}
```

91

1(d) Find the output of the following program: OD 2009 3

```
#include<iostream.h>

void main ( )
{
int A[ ] = {10, 15, 20, 25, 30}
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;
}
}
```

92

1(d) Find the output of the following program : Delhi 2010 3

```
#include <iostream.h>
struct POINT
{int X, Y, Z;};
void StepIn(POINT & P, int Step=1)
{
P.X+=Step;
P.Y -=Step;
P.Z+=Step;
}
void StepOut(POINT & P, int Step=1)
{
P.X-=Step;
P.Y+=Step;
P.Z–=Step;
}
```

```
void main ( )
{
POINT P1={15, 25, 5}, P2={10, 30, 20};
StepIn(P1);
StepOut(P2,4);
cout<<P1.X<<“,”<<P1.Y<<“,”<<P1.Z<<endl;
cout<<P2.X<<“,”<<P2.Y<<“,”<<P2.Z<<endl;
StepIn(P2,12);
cout<<P2.X<<“,”<<P2.Y<<“,”<<P2.Z<<endl;
}
```

93

1(d) Find the output of the following program: OD 2010 3

```
#include <iostream.h>

struct THREE_D
{int X,Y,Z;};

void MoveIn(THREE_D &T, int Step=l)
}
T.X+=Step;
T.Y-=Step;
T.Z+=Step
}
void MoveOut(THREE_D &T, int Step=l)
{
T.X-=Step;
T.Y+=Step;
T.Z-=Step;
}
void main ()
{
THREE_D Tl={lO,20,5},T2={30,lO,40};
MoveIn(T1);
MoveOut(T2,5);
cout<<Tl.X<<“,”<<Tl.Y<<“,”<<T1.Z<<endl;
cout<<T2.X<<“,”<<T2.Y<<“,”<<T2.Z<<endl;
MoveIn(T2,l0);
cout<<T2.X<<“,”<<T2.y<<“,”<<T2.Z<<endl;
}
```

94

1(d) Find the output of the following program: Delhi 2011 3

```
#include<iostream.h>
void ChangeArray(int Number, int ARR[ ], int Size)
{
for (int L =0; L<Size; L++)
if (L<Number)
```

```
ARR [L] +=L;
e1se
ARR [L] *=L;
}

void Show (int ARR [ ], int Size)
{
for (int L=0; L<Size; L++)
(L%2!=0) ?cout<<ARR[L] <<"#": cout<<ARR[L]<<end1 ;
}
void main ( )
{
int Array [ ] = {30, 20, 40, 10, 60, 50};
ChangeArray (3, Array, 6) ;
Show (Array, 6) ;
}
```

95

1(d) Find the output of the following program: OD 2011 3

```
#include <iostream.h>

void SwitchOver(int A [ ], int N, int Split)
{
for (int K=0 ; K<N; K++)
if (K<Split)
A(K]+ =K;
else
A [K]*=K;
}

void Display (int A [ ], int N)
{
for (int K=0 ; K<N ; K++)
(K%2==0)? cout<<A[K]<<"%":cout<<A(K]<<end1;
}

void main ( )
{
int H[ ]= {30,40,50,20,10,5};
SwitchOver (H, 6, 3);
Display (H, 6);
}
```

96
1(d) Find the output of the following program: **SP 2010 SET I** 3

```
#include <iostream.h>
struct GAME
{ int Score, Bonus;};
void Play(GAME &g, int N=10)
{
g.Score++;g.Bonus+=N;
}

void main()
{
GAME G={110,50};
Play(G,10);
cout<<G.Score<<":"<<G.Bonus<<endl;
Play(G);
cout<<G.Score<<":"<<G.Bonus<<endl;
Play(G,15);
cout<<G.Score<<":"<<G.Bonus<<endl;
}
```

97
(d) Find the output of the following program: SAMPLE PAPER 2010 SET II 3

```
#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] <<'#';
}
```

98 Sample Paper Set I 2012

(d) Find the output of the following program: **3**

```
#include <iostream.h>
struct STOCK

{ int Ino, Qty;};
void Buy(STOCK &I, int TQ=2)
{
I.Qty+=TQ;
}
void main()
{
STOCK I[2]={{101,50},{103,20}};
Buy(I[1],5);
cout<<I[1].Ino<<":"<<I[1].Qty<<endl;
Buy(I[0],10);
cout<<I[0].Ino<<":"<<I[0].Qty<<endl;
Buy(I[1]);
cout<<I[1].Ino<<":"<<I[1].Qty<<endl;
}
```

99 Sample Paper Set II 2012

(d) Find the output of the following program: 3

```
#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]<<'#';
```

100

(d) Find the output of the following program: SAMPLE PAPER 2009 SET I 3

```
#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;
}
```

101

(d) Find the output of the following program:
SAMPLE PAPER 2009 SET II (Repeated in Sample Paper 2012 Set II) 3

```
#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] <<'#';
        }
```

(d) Find the output of the following program : 3

```
#include <iostream.h>
class METRO
{
   int Mno,TripNo,PassengerCount;
public:
  METRO(int Tmno=1) {Mno=Tmno;TripNo=0;PassengerCount=0;}
  void Trip(int PC=20){TripNo++;PassengerCount+=PC;}
  void StatusShow(){cout<<Mno<<":"<<TripNo<<":"
                                    <<PassengerCount<<endl;}
};
void main()
{
   METRO M(5),T;
   M.Trip();
   T.Trip(50);
   M.StatusShow();
   M.Trip(30);
   T.StatusShow();
   M.StatusShow();
}
```

QNO 1(e)

103

1(e) Write the output of the following program 3
Delhi 1998

```
# include<iostream.h>

void Execute(int &X, int Y = 200)
{
int TEMP = X + Y;
X += TEMP;
if (Y != 200)
cout << TEMP << " " <<X<<” “<<Y<<endl;
}

void main()
{
int A = 50, B = 20;

Execute(B);
cout << A << " " << B << endl;

Execute(A,B);
cout << A << " " << B << endl;
}
```

104

1(e) Write the output of the following program : 3
Delhi 1999

```
# include <iostream.h>
static int i=100;
void abc()
{
static int i=8;
cout<< "first=" <<i;
}
void main()
{
static int i = 2;
abc();
cout << "second =” << i << endl;
}
```

105

1 (e) Write the output of the following program: 3
Delhi 2000

```
# include <iostream.h>
int func(int &x, int y = 10)
{
if (x%y == 0)
return ++x;
else
return y--;
}
void main()
{
int p=20, q=23;
q=func (p,q);
cout << p << " " << " " << q << endl;
p=func (q);
cout<< p << " " << " " << q << endl;
q=func (p);
cout << p << " " << " " << q << endl;
}
```

106

1(e) Give the output of the following program 3
Delhi 2001

```
# include <iostream.h>
int global = 10;
void func(int &x, int y)
{
x = x - y;
y = x * 10;
cout << x << << y << '\n';
}
void main()
{
int global = 7:
func (::global, global);
cout << global <<”,” << ::global <<"\n";
func(global,:: global);
cout<< global << “,”<<::global<<„\n";
}
```

107

1 (e) Write the output of the following program: 3
Delhi 2002

```
#include <iostream.h>

void X(int A, int &B)
{
A = A+B;
B = A-B;
A = A-B;
}
void main()
{
int a=4, b=l8;
X(a,b);
cout<< a <<”,”<<b;
}
```

108
1(d) What will be the output of the following program : 2
Delhi 2004

```
#include<iostream.h>
#include<ctype.h>
#include<conio.h>
#include<string.h>
void ChangeString(char Text[], int &Counter)
{
char *Ptr = Text;
int Length = strlen (Text);
for ( ;Counter<Length-2; Counter+=2, Ptr++)
{
* (Ptr + Counter) = toupper( * (Ptr + Counter) );
}
}
void main()
{
clrscr();
int Position = 0;
char Messaget[] = “Pointers Fun”;
ChangeString (Message, Position);
cout<<Message<<“ @ “<<Position;
}
```

109
1(e) Find the output of the following program :
Delhi 2006 2

```
#include<iostream.h>
void main( )
{ long NUM= 1234543;
```

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

110
1(e) Find the output of the following program : OD 2006 2

```
#include<iostream.h>
void main()
{ long Number = 7583241;
int First=0, Second=0;
do
{ int R = Number%10;
if(R%2==0)
First+=R;
else
Second+=R;
Number /=10;
}while(Number>0);
cout<<First-Second;
}
```

111
1(e) Find the output of the following program : Delhi 2007 3

```
#include<iostream.h>

void Indirect(int Temp=20)
{
for (int 1=10; I<=Temp; I+=5)
cout<<I<<" , " ;
cout<<endl;
}

void Direct (int &Num)
{
Num+=10;
Indirect(Num);
}
```

```
void main()
{
int Number=20;
Direct(Number) ;
Indirect();
cout<< " Number=" <<Number<<endl ;
}
```

112

1(e) Find the output of the following program : OD 2007 3

```
# include < iostream.h>
void Withdef (int HisNum = 30)
{
for (int 1=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;
}
```

113

1(e) Find the output of the following program:

Delhi 2008 2

```
#include<iostream.h>

void main ( )
{
int U = 10, V = 20;
for (int I = 1; 1 < = 2; 1++)
{
cout<<"[1]="<<U++<<"&"<<V–5<<endl;
cout<<"[2]="<<++V<<"&"< <U+ 2< <endl;
}
}
```

114
1(e) Find the output of the following program : OD 2008 2

```
#include<iostream.h>

void main ( )
{
int A=5, B=10;
for (int I = 1; I<=2; 1++)
{
cout<< “Linel=”<<A++<<“&”<<B–2<<endl;
cout<<“Line2=”<<++B<<“&”<<A+3<<endl;
}
}
```

115
1(e) Find the output of the following program : Delhi 2009 2

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

void Encode (char Info [ ], int N) ;

void main ( )
{
char Memo [ ] = “Justnow” ;
Encode(Memo, 2) ;
cout<<Memo<<endl ;
}

void Encode(char Info[ ], int N)
{
for (int I = 0 ; Info[I] != ‘\0’ ; 1++)
if (1%2= =0)
Info[I] = Info[I] –N ;
else if (islower(Info[I]))
Info[I] = toupper(Info[I]) ;
else
Info[I] = Info[I] +N ;
}
```

116
1(e) Find the output of the following program: OD 2009 2

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

void Secret (char Mig [ ], int N);
```

```
void main ( )
{
char SMS[ ] = “rEPorTmE” ;
Secret{SMS,2);
cout<<SMS<<end1;
}

void Secret(char Msg[ ], int N)
{
for (int C=0; Msg[C] ! =’ \0' ;C++)
if (C%2==0)
Msg[C] = Msg[C]+N;
else if (isupper(Msg[C]))
Msg[C] = tolower(Msg[C]);
else
Msg[C] = Msg[C]-N;
}
```

117

1(e) Find the output of the following program : Delhi 2010 2

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

void ChangeIt(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==O)
Text[K]=toupper(Text[K]);
else
Text[K]=Text[K-l];
}
}

void main ( )
{
char OldText[ ]=”pOwERALone”;
ChangeIt(OldText,’%’);
cout<<“New TEXT:”<<OldText<<endl;
}
```

118
1(e) Find the output of the following program: OD 2010 2

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

void MyCode (char Msg [], char CH)
{
for (int (Cnt=O;Msg[Cnt]!='\0';Cnt++)
{
if (Msg[Cnt]>='B' && Msg[Cnt]<='G')
Msg[Cnt]=tolower(Msg[Cnt]);
else
if (Msg[Cnt]=='A'|| Msg[Cnt]=='a')
Msg[Cnt]=CH;
else
if (Cnt%2==0)
Msg[Cnt]=toupper(Msg[Cnt]);
else
Msg[Cnt]=Msg[Cnt-l];
}
}

void main ()
{
char MyText [] =" ApEACeDriVE";
MyCode(MyText,'@');
cout<<"NEW TEXT:"<<MyText<<endl;
}
```

119
1(e) Find the output of the following program: Delhi 2011 2

```
#include<iostream.h>

void main ( )
{
int Track [ ] = {10, 20, 30, 40}, *Striker ;
Stxiker=Track :
Track [1] += 30 ;
cout<<"Striker>"<<*Striker<<end1 ;
Striker – =10 ;
Striker++ ;
cout<<"Next@"<<*Striker<<end1 ;
Striker+=2 ;
cout<<"Last@"<<*Striker<<end1 ;
cout<< "Reset To" <<Track[0] <<end1 ;
}
```

120
1(e) Find the output of the following program: OD 2011 2

```
#include<iostream.h>

void main ( )
{
int *Queen, Moves [ ] = {11, 22, 33, 44};
Queen = Moves;
Moves [2] + = 22;
cout<< "Queen @"<<*Queen<<end1;
*Queen - = 11;
Queen + = 2;
cout<< "Now @"<<*Queen<<end1;
Queen++;
cout<< "Finally@"<<*Queen«end1;
cout<< "New Origin @"<<Moves[0]<<end1;
}
```

121
1(e) Find the output of the following program:
SAMPLE PAPER 2009 SET I 2

```
#include <iostream.h>
#include <ctype.h>
void Encrypt(char T[])
{
for (int i=0;T[i]!='\0';i+=2)
if (T[i]=='A' || T[i]=='E') T[i]='#';
    else if (islower(T[i])) T[i]=toupper(T[i]);
else T[i]='@';
}
void main()
        {
        char Text[]="SaVE EArtH";//The two words in the string Text
        //are separated by single space
        Encrypt(Text);
        cout<<Text<<endl;
        }
```

122
1(e) Find the output of the following program:
SAMPLE PAPER 2009 SET II 2

```
        #include <iostream.h>

        struct Game
        {
                char Magic[20];int Score;
        };
```

```
void main()
{
        Game M={“Tiger”,500};
        char *Choice;
        Choice=M.Magic;
        Choice[4]=’P’;
        Choice[2]=’L’;
        M.Score+=50;
        cout<<M.Magic<<M.Score<<endl;
        Game N=M;
        N.Magic[0]=’A’;N.Magic[3]=’J’;
        N.Score-=120;
        cout<<N.Magic<<N.Score<<endl;
}
```

123

1(e) Find the output of the following program:

SAMPLE PAPER 2010 SET I 2

```
#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;
}
```

124

(e) Find the output of the following program:

SAMPLE PAPER 2010 SET II 2

```
#include <iostream.h>
struct Game
{
char Magic[20];int Score;
};
```

```
void main()
{
Game M={"Tiger",500};
char *Choice;
Choice=M.Magic;
Choice[4]='P';
Choice[2]='L';
M.Score+=50;
cout<<M.Magic<<M.Score<<endl;
Game N=M;
N.Magic[0]='A';N.Magic[3]='J';
N.Score-=120;
cout<<N.Magic<<N.Score<<endl;
}
```

125 Sample Paper Set I 2012

(e) Find the output of the following program: **2**

```
#include <iostream.h>
#include <ctype.h>
void Decode(char Text[])
{
for (int C=0;Text[C];C++)
{
char CH=(Text[C]>='a' && Text[C]<='z')?Text[C]-32:Text[C];
if (CH<='M' && CH>='H')
Text[C]='#';
else if (CH=='A' || CH=='E' || CH=='U')
Text[C]=tolower(CH);
else if (CH>='0' && CH<='9')
Text[C]='$';
else
Text[C]=toupper(CH);
}
}
void main()
{
char SMS[]="US2InDIA";

 Decode(SMS);
 cout<<SMS<<endl;
 }
```

(e) Find the output of the following program: 2

```
#include <iostream.h>
struct Game
{
    char Magic[20];int Score;
};
void main()
{
    Game M={"Tiger",500};
    char *Choice;
    Choice=M.Magic;
    Choice[4]='P';
    Choice[2]='L';
    M.Score+=50;
    cout<<M.Magic<<M.Score<<endl;
    Game N=M;
    N.Magic[0]='A';N.Magic[3]='J';
    N.Score-=120;
    cout<<N.Magic<<N.Score<<endl;
}
```


(e) Find the output of the following program : 2

```
#include <iostream.h>
#include <ctype.h>
typedef char Str80[80];
void main()
{
   char *Notes;
   Str80 Str="vR2GooD";
   int L=6;
   Notes=Str;
   while (L>=3)
   {
      Str[L]=(isupper(Str[L])?tolower(Str[L]):
                                    toupper(Str[L]));
      cout<<Notes<<endl;
      L--;
      Notes++;
   }
}
```

QNO 1 (f)

128
(f) Write a C++ function having two value parameters X and N with result type float to find the sum of series given below. 1998 Delhi Board 2

1+X1/2!+X2/3!+...+ XN/(N + 1)!

129
(f) Write a C++ function that converts a 2-digit octal number into binary number and prints the binary equivalent. 1999 Delhi 2

130
(f) Write a function SEQSUM() in C++ with two arguments, double x and int n. The function should return a value of type double and it should find the sum of the Following series : 2000 Delhi 2

1 + x / 2! + x2 / 4! + x3 / 6! + x4 / 8! + x5 /10! + ... + xn / (2n)!

131
f) Write a function name SUMFUN(), with arguments x and N, which returns the sum of the following series 2001 Delhi 2

1 - x2/2 + x3/3 - x4/4 + x5/5 - x6/6+….+xN/N

132
(d) Raising a number to a power p is the same as multiplying n by itself p times. Write a function called power that takes two arguments, a double value for n and an int value for p, and return the result as double value. Use default argument of 2 for p, so that if this argument is omitted the number will be squared. Write the main function that gets value from the user to test power function 2002 Delhi 2

133
(f) Write definition for a function SumSequence( ) in C++ with two arguments/ parameters — double x and int n. The function should return a value of type double and it should perform sum of the following series : 2004 Delhi 4

1/x — 3!/x2 + 5!/x3 — 7!/x4 + 9!/x5 — ... up to n terms
(Note : The symbol ! represents Factorial of a number i.e.
5! = 5 × 4 × 3 × 2 × 1)

134
(f) What are Nested Structures ? Give an example. Delhi 2006 2

135
(f) What is a default constructor ? How does it differ from destructor ?
OD 2006 2

136
(f) In the following C++ program what is the expected value of Myscore from Options (i) to (iv) given below. Justify your answer. Delhi 2007 2

```
#include<stdlib.h>
#include<iostream.h>
void main( )
{
        randomize();
        int Score[] = {25,20,34,56, 72, 63}, Myscore;
        Myscore = Score[2 + random(2)];
        cout<<Myscore<<endl;
}
```

(i) 25 (ii) 34 (iii) 20 (iv) None of the above

137
(f) In the following C++ program what is the expected value of MyMarks from Options (i) to (iv) given below. Justify answer. OD 2007 2

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

void main ()
{
randomize ();
int Marks [ ]= {99, 92, 94, 96, 93, 95}, MyMarks;
MyMarks = Marks [1 + random (2) ];
cout<<MyMarks<<endl;
}
```

(i) 99 (ii) 94 (iii) 96 (iv) None of the above

138
(f) In the following program, find the correct possible output(s) from the options:
Delhi 2008 2

```
#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:

139
(f) In the following program, find the correct possible output(s) from the options:
OD 2008 2

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

void main ( )
{
randomize() ;
char Area [ ] [10] = {‘‘NORTH”, ‘‘SOUTH”, “EAST”, “WEST”} ;
int ToGo;
for (int I=0; 1<3; 1++)
{
ToGo = random(2) +1;
cout<<Area [ToGo]<<” : “;
}
}
```

outputs:
(i) SOUTH:EAST:SOUTH:
(ii) NORTH:SOUTH:EAST:
(iii) SOUTH:EAST:WEST:
(iv) SOUTH:EAST:EAST:

140
(f) Study the following program and select the possible output from it :
Delhi 2009 2

```
#include <iostream.h>
#include <stdlib.h>
const int LIMIT = 4 ;
void main ( )
{
randomize ( ) ;
int Points;
Points = 100 + random(LIMIT) ;
for (int P=Points ; P>=100 ; P– –)
cout<<P<<“#” ;
cout<<endl;
}
```

(i) 103#102#101#100#
(ii) 100#101#102#103#
(iii) 100#101#102#103#104#
(iv) 104#103#102#101#100#

141
(f) Study the following program and select the possible output from it :
OD 2009 2

```
#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#
(iii) 50#51#
(iv) 51#50#

142
(f) The following code is from a game, which generates a set of 4 random numbers. Yallav is playing this game, help him to 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.
Delhi 2010 2

```
#include <iostream.h>
#include <stdlib.h>
const int LOW=15;
void main ( )
{
randomize( ) ;
int POINT=5, Number;
for (int 1=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:

143
(f) The following code is from a game, which generates a set of 4 random numbers. Praful is playing this game, help him to 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.

OD2010 2

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

const int LOW=25;

void main ()
{

randomize();
int P01NT=5,Number;

for (int I=1;I<=4;I++)
{
Number=LOW+random(POINT);
Cout<<Number<<":";
P0INT--;
}
}
```

(i) 29:26:25:28:
(ii) 24:28:25:26:
(iii) 29:26:24:28:
(iv) 29:26:25:26:

144
(f) Go through the C++ code shown below, and find out the possible output or outputs from the suggested Output Options (i) to (iv). Also, write the least value and highest value, which can be assigned to the variable Guess.

Delhi 2011 2

```
#include <iostream.h>
#include <stdlib.h>
void main ( )
{
randomize ( ) ;
int Guess, High=4;
for{int C=Guess ; C<=55 ; C++)
cout<<C<<"#" ;
}
```

(i) 50 # 51 # 52 # 53 # 54 # 55 #
(ii) 52 # 53 # 54 # 55
(iii) 53 # 54 #
(iv) 51 # 52 # 53 # 54 # 55

145
(f) Go through the C++ code shown below, and find out the possible output or outputs from the suggested Output Options (i) to (iv). Also, write the minimum and maximum values, which can be assigned to the variable MyNum.

OD 2011 2

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

void main ( )
{
randomize ( ) ;
int MyNum, Max=5;
MyNum = 20 + random (Max) ;
for (int N=MyNum; N<=25;N++)
cout<N<"*";
}
```

(i) 20*21*22*23*24*25
(ii) 22*23*24*25*
(iii) 23*24*
(iv) 21*22*23*24*25

146
(f) In the following program, if the value of N given by the user is 15, what maximum and minimum values the program could possibly display?

SAMPLE PAPER 2009 SET I 2

```
#include <iostream.h>
#include <stdlib.h>
void main()
{
  int N,Guessme;
  randomize();
  cin>>N;
  Guessme=random(N)+10;
  cout<<Guessme<<endl;
}
```

147
1(f)In the following program, if the value of N given by the user is 20, what maximum and minimum values the program could possibly display?

SAMPLE PAPER 2009 SET II 2

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

void main()
{
  int N,Guessnum;
  randomize();
  cin>>N;
```

```
  Guessnum=random(N-10)+10;
  cout<<Guessnum<<endl;
}
```

148
(f) 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)?
SAMPLE PAPER 2010 SET I 2

```
#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;
}
}
```

(i) ABBC
(ii) ACBA
(iii) BCDA
(iv) CABD

149
(f) In the following program, if the value of N given by the user is 20, what maximum and minimum values the program could possibly display?
SAMPLE PAPER 2010 SET II 2

```
#include <iostream.h>
#include <stdlib.h>
void main()
{
int N,Guessnum;
randomize();
cin>>N;
Guessnum=random(N-10)+10;
cout<<Guessnum<<endl;
}
```

150 Sample Paper Set I 2012

(f) Observe the following program and find out, which option or options out of (i) to (iv) will not be expected output(s) from the program? What will be the minimum and the maximum value assigned to the variable Sequence, when the value of C is 2? 2

```
#include <iostream.h>
#include <stdlib.h>
void main()
{
int Sequence,Select[4]={25,90,30,45};
randomize();
for (int C=0;C<4;C++)
{
Sequence=random(4-C);
cout<<Select[Sequence]<<"@";
}
}
```

(i) 45@90@30@25@

(ii) 90@25@90@25@

(iii) 30@30@25@25@

(iv) 30@30@90@25@

151 Sample Paper Set II 2012

(f) In the following program, if the value of N given by the user is 20, what maximum and minimum values the program could possibly display? 2

```
#include <iostream.h>
#include <stdlib.h>
void main()
{
    int N,Guessnum;
    randomize();
    cin>>N;
    Guessnum=random(N-10)+10;
    cout<<Guessnum<<endl;
}
```

(f) Observe the following program and find out, which output(s) out of (i) to (iv) will ***not*** be expected from the program ? What will be the minimum and the maximum value assigned to the variable Chance ? *2*

```
#include <iostream.h>
#include <stdlib.h>
void main()
{
   randomize();
   int Arr[]={9,6},N;
   int Chance=random(2)+10;
   for (int C=0;C<2;C++)
   {
      N=random(2);
      cout<<Arr[N]+Chance<<"#";
   }
}
```

(i) 9#6#

(ii) 19#17#

(iii) 19#16#

(iv) 20#16#