Q1. What will be the output of the following program segment –

```cpp
class Num
{
  int  x;
  float  y;

public:
  void init()
  {  x = y = 0;
  }
  void read(int i, float j)
  {  x = i;
      y = j;
  }
  void Display()
  {   cout << "x " << x << endl;
      cout << "y " << y << endl;
  }
};

void main()
{   X  obj1, obj2;
    obj1.init();
    obj2.init();
    obj1.read(15, 11.21);
    obj1.display();
    obj2.display();
}
```

Q2. Identify the errors in the following program code –

```cpp
#include <iostream.h>
class myclass
{  int  a,b;
  public:
    void set(int i ,int j )
    {  a = i ;  b = j;}  
    void show()
    {  cout <<a<<b<<endl ; }
};

class yourclass
{  int  a ,b;
  public :
    void set(int i ,int j )
    {  a = i ;  b = j ; }
    void show()
    {  cout << a << b <<endl; }
}

void main()
{   myclass  obj1;  
    yourclass  obj2;
    obj1.set(10,4) ;
    obj2=obj1;
    obj1.show( );
    obj 2.show( );
}
```
Q3 What is wrong in the following class declaration---
```cpp
class
{    private :
        char  name [ 20] ,
        int    age ;
    void     Read( );

    Public
    void Display ( );
}
```
void main()
{    employee       e;
    employee.Display( );
    e.Read( );
}

Q4. Answer the questions (i) and (ii) after going through the following program-
```cpp
#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 ;
    B.Disp( ) ;
}
```

Q(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 corrections to be made
in the above code.

Q(ii). What shall be the possible output when the program gets executed?

Q5. Find the syntax errors, if any----
```cpp
class ABC
{ int x=10;
    float  y ;
    ABC ( ) {y=5 ;}
    ~ ( ) { } 
}

void main()
{ ABC  a1 , a2 ;
```
Q6. Answer the questions (i) and (ii) after going through the following program-
class Science
{
    char Topic [20];    int weightage ;    public:
        Science( ) // Function 1
        {            strcpy (Topic,"Optics") ;            weightage  = 30 ;            cout << “ Topic Activated” ;        }
    ~Science( ) // Function 2
        {            cout << “ Topic Deactivated ”; }    }

(i) Name the specific features of class shown by Function 1 and Function 2 in the
above example.
(ii) How would Function 1 and Function 2 gets executed?

Q7. 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 ( );}

Q8. Find the output of the following program segment-
   # include <iostream.h>
class student
{
    private :        static int count ;        int rollno,marks ;    public :
        void enter( int r, int m)
        {            rollno = r ; marks = m ; count ++ ; }
        void show()
        {            cout <<“Roll number ” << rollno <<endl ;            cout <<“Marks” << marks << endl ;        }
    static void showcount ( )
        {            cout << “ count = “ << count << endl ;}
    ;    int student::count = 0 ;
    void main( )
    {        student obj1 , obj2, obj3 ;        obj1.enter(1001, 99) ; student::showcount();        obj2.enter(1002,88); student::showcount();
        }
obj3.enter(1003,100);student::showcount();
obj1.show();obj2.show();obj3.show();
}

Q9. What’s wrong with this?
class C { public: int x = 0; };

Q10. Given the following C++ code, answer the question (i) & (ii)
class TestMeOut
{
    public:
    ~TestMeOut() // Function 1
    {
        cout << “Leaving the examination hall” << endl;
    }
    TestMeOut() // Function 2
    {
        cout << “Appearing for examination” << endl;
    }
    void MyWork() // Function 3
    {
        cout << “Attempting Questions” << endl;
    }
};

(i) In object oriented programming, what is function 1 referred as and when does it get invoked/called?
(ii) In object oriented programming, what is function 2 referred as and when does it get invoked/called?

Q11. Answer the question (i) and (ii) after going through the following program-
#include <iostream.h>
#include <string.h>
class AirIndia
{
    char flightno[5];
    int noofpassenger;
    public:
        AirIndia() // Function 1
        {
            strcpy(flightno, “”);
            noofpassenger = 0;
        }
        AirIndia(char str, int n) //Function 2
        {
            strcpy(flightno, str);
            noofpassenger = n;
        }
        void Input() // Function 3
        {
            cin >> flightno;
            cin >> noofpassenger;
        }
        ~AirIndia() // Function 4
        {
            cout << “counter closed” << endl;
        }
};

(i) In object oriented programming, which concept is illustrated by Function 1 and Function 2 together? Write the statement to call these functions.
(ii) What is the scope of two data members of the class AirIndia? What does the scope of data members depend upon?

Q12. Answer the question (i) and (ii) after going through the following class –
Class Interview
{
    int month;
    public:
        Interview(int y) { month = y; } // constructor 1
        Interview(Interview & t); // constructor 2

Q13. Consider the following and answer the questions given below-

```cpp
class University
{
    int NOC; // Number of Colleges
    protected:
        char Uname[25]; // University Name
    public:
        University();
        char State[25];
        void EnterData();
        void DisplayData();
};

class College: public University
{
    int NOD; // Number of Departments
    char Cname[25]; // College Name
    protected:
        void Affiliation();
    public:
        College();
        void Enrol(int, int);
        void Show();
};
class Department: public College
{
    char Dname[25]; // department
    int Nof; // No. of faculty members.
    public:
        Department();
        void Display();
        void Input();
};
```
Class Abc
{ private :
    int x,y ;
    void err_1()
    { cout << “error “; }

public :
    void Xdata (int d)
    { x = d ; y = d++ ;}
    void Ydata ()
    { cout <<x<<y ; }
};

a) Write the name that specifies the above class.
b) Write the data of the class with their access scope.
c) Write all member functions of the class along with their access scope.
d) Indicate the member function of the class Abc that sets the data.

Q16. Define a class complex for a set of overloaded function called multiply ( ) that perform--
(i) multiplication between complex number and complex number, returning complex number.
(ii) between complex number and floating point number returning complex number.
(iii) between floating point number & floating point number returning floating point number.
   (HINT : i) complex multiply(complex, complex) ;
    ii) complex multiply(complex,float) ;
        OR
    complex multiply(float, complex) ;
    iii) float multiply(float, float) ;

Q17. In the following program, if the value of N given by the user is 15, what maximum and minimum values the program could possible display?
#include <iostream.h>
#include <stdlib.h>
void main()
{ int N , Guessme ;
    randomize( ) ;
    cin >> N ;
    Guessme = random (N) + 10 ;
    cout << Guessme <<endl;
}

Q18. 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?
#include <iostream.h>
#include <stdlib.h>
void main()
{ int N,Guessnum ;
    randomize ( ) ;
    cin >> N ;
    Guessnum = random (N-10) + 10 ;
    cout << Guessnum << endl;
}
Q19. Answer the questions (i) & (ii) after going through the following class ---

```cpp
class seminar {
    int Time;

public:
    seminar() // Function 1
    {
        Time = 30;
        cout << “seminar starts now” << endl;
    }
    void Lecture() // Function 2
    {
        cout << “Lecture in the seminar” << endl;
    }
    seminar(int Duration) // Function 3
    {
        Time = Duration;
        cout << “seminar starts now” << endl;
    }
    ~Seminar() // Function 4
    {
        cout << “vote of thanks” << endl;
    }
};
```

Q(i) In object oriented programming, what is Function 4 referred as and when does it get invoked/called?

Q(ii) In object oriented programming, which concept is illustrated by Function 1 and Function 3 together?

Q20. Declare a class myfolder with the following specification---

```cpp
private members
Filenames - an array of strings of size [10] [25]
    (to represent all the names of files inside myfolder).
Availspace - long (to represent total number of bytes available in myfolder).
Usedspace - long (to represent total number of bytes used in myfolder).

Public members
Newfileentry() – A function to accept values of Filenames, Availspace, and Usedspace from user.
Retavailspace() - A function that returns the value of total Kilobytes available(1 Kb=1024 bytes).
Showfiles( ) --- a function that displays the names of all the files in Myfolder.
```

Q21. Define a class with complete function definition COMPETITION in C++ with the following specifications---

```cpp
Private members
event_no ----- integer
description ----- char(30)
score ----- integer
qualified ----- char(1)

Public members
input() ---- to take input for event_no, description and score.
award() ---- to award qualified as ‘y’ if score is more than the cut off score passed as int to the function else award ‘N.
show( ) ---- to display all details.
```