HOLIDAY HOMEWORK ASSIGNMENT-5

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

```
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  obj 1, obj2;
       obj1.init( ) ;
       obj2.init( ) ;
       obj1.read(15, 11.21);
       obj1.display( );
       obj2.display( );
   }
```

Q2. Identify the errors in the following program code-

```
# 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   obj 1;
        yourclass   obj 2;
        obj1.set(10,4) ;
        obj2=obj1;
        obj1.show( );
        obj 2.show( );
     }
```

Q3 What is wrong in the following class declaration---

```
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-

```
# 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----

```
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 examinination 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 >> flight no;
                     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
```

```
};
```
    (i)   **create an object, such that it invokes constructor 1**

    (ii)   **Write complete definition for constructor 2.**

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

```
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( ) ;
  } ;
```

(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 functions, which are accessible from the objects of class Department.

(iv) Name the data members, which are accessible from the objects of class College.

Q14. Define a class PLAY in C++ with the following specifications –

    <u>**private members**</u>

        • **play code**   **integer**

        • **play title**   **25 character**

        • **duration**   **float**

        • **noofscenes**   **integer**

    <u>**public members**</u>

        • **A constructor function to initialize duration as 45 and no of scenes as 5.**

        • **NewPlay( ) function to accept values for playcode & playtitle.**

        • **Moreinfo( ) function to assign the values of duration and no of scenes with the help of corresponding values passed as parameters to this function.**

        • **Showplay ( ) function to dislpay all the data members on the screen.**

Q15. Consider the following class declaration and answer the questions below-

```
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---

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 fnction 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—

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.