INTERNATIONAL INDIAN SCHOOL, RIYADH

COMPUTER SCIENCE

WORK SHEET – I TERM (2015-2016)

CLASS: XII

1. a) What is meant by Free store with reference to memory allocation in C++?

   b) How is # define different from const? Explain.

   c) Name the header files required to run the following code.

```
void main( )
{
        char  string[20];
        cin>>string;
        cout<<"Changed text is"<<toupper(string)<<endl;
}
```

   d) Rewrite the following C++ code after removing the syntax error(s). Assume that all the required header files are already included.

```
typedef  char[80]  Text;
void main( )
{
        Tx  Text;
        gets(Tx);
        cout<<Tx[0]<<'\t<<Tx[2];
        cout<<Tx<<endline;
}
```

   e) Give the output of the following C++ code. Assume that all the required header files are already included.

```
void change(char *state, int &s)
{       int b=s;
        for(int  x=0; s>=0; x++, s--)
        if((x+s)%2)
                *(state+x)=toupper(*(state+b-x));
}
```

```
void main( )
{
        char s[]=”Punjab”;
        int b=strlen(s)-1;
        change(s, b);
        cout<<s<<”#”<<b;
}
```

f. Find the output of the following C++ program:

```
 #include <iostream.h>
#include<conio.h>
 #include <ctype.h>
class Class
{       int Cno,total;
        char section;
public:
        Class(int no=1)
        {    Cno=no;
             section='A';
             total=30; }
        void addmission(int c=20)
        {   section++;
            total+=c; }
        void ClassShow()
        {   cout<<Cno<<":"<<section<<":"<<total< <endl;
        }
};
void main()
 {      Class C1(5),C2;
        C1.addmission(25);
        C1.ClassShow();
        C2.addmission();
        C1.addmission(30);
        C2.ClassShow();
        C1.ClassShow();
}
```

g. Study the following C++ program and select the possible output(s) from it : Find the maximum and minimum value of L.

```
#include <iostream.h>
#include <stdlib.h>
void main()
{       randomize();
        char P[]="C++PROGRAM";
         long L;
        for(int I=0;P[I]!='R';I++)
        {       L=random (sizeof(L)) +5;
                cout<<P[L]<<"-";
        }
}
```

Options:

i) R-P-O-R-

ii) P-O-R-+-

iii) O-R-A-G-

iv) A-G-R-M-

2.a. How encapsulation and abstraction are implemented in C++ language? Explain with an example.

b. Answer the questions (i) and (ii) after going through the following C++ class:

```
class Stream
{     int StreamCode ;
      char Streamname[20];
      float fees;
      public:
            Stream( ) //Function 1
            { StreamCode=1;
              strcpy (Streamname,"DELHI");
              fees=1000; }
            void display(float C) //Function 2
            { cout<<StreamCode<<":"<<Streamname<<":"<<fees<<endl;

            }
            ~Stream( ) //Function 3
            {    cout<<"End of Stream Object"<<endl;}

             Stream (int SC,char S[ ],float F) ; //Function 4
             };
```

i) In Object Oriented Programming, what are Function 1 and Function 4 combined together referred as? Write the definition of function 4.

ii) What is the difference between the following statements?

```
Stream S(11,"Science",8700);
Stream S=Stream(11,"Science",8700);
```

c. Define a class Customer with the following specifications.

Private Members :

Customer_no integer
Customer_name char (20)
Qty integer
Price, TotalPrice, Discount, Netprice float

Member Functions:

Public members:

* A constructer to assign initial values of Customer_no as 111,Customer_name as "Leena", Quantity as 0 and Price, Discount and Netprice as 0.
*Input( ) – to read data members(Customer_no, Customer_name, Quantity and Price) call Caldiscount().
* Caldiscount ( ) – To calculate Discount according to TotalPrice and Netprice
  TotalPrice = Price*Qty
  TotalPrice >=50000→ Discount 25% of TotalPrice
  TotalPrice >=25000 and TotalPrice<50000 →Discount 15% of TotalPrice
  TotalPrice<25000 → Discount 10% of TotalPrice
  Netprice = TotalPrice – Discount
*Show() – to display Customer details.

d. Answer the questions (i) to (iv) based on the following code:

```
class AC
{
        char Model[10];
        char Date_of_purchase[10];
        char Company[20];
   public( ):
        AC( );
        void entercardetail( );
        void showcardetail( );
```

```
};
class Accessories : protected AC
{
    protected:
        char Stabilizer[30];
        char AC_cover[20];
    public:
        float Price;
        Accessories( );
        void enteraccessoriesdetails( );
        void showaccessoriesdetails( );
};
class Dealer : public Accessories
{
         int No_of_dealers;
        char dealers_name[20];
        int No_of_products;
   public:
        Dealer( );
        void enterdetails( );
         void showdetails( );
};
```

(i) How many bytes will be required by an object of class Dealer and class Accessories?

(ii) Which type of inheritance is illustrated in the above c++ code? Write the base class and derived class name of class Accessories.

(iii) Write names of all the members which are accessible from the objects of class Dealer.

(iv) Write names of all the members accessible from member functions of class Dealer.

2. a. Write the command to place the file pointer at the 10th and 4th record starting position using seekp() or seekg() command. File object is 'file' and record name is 'STUDENT'.

b. Write a function in C++ to count and display the no of three letter words in the file "VOWEL.TXT".

Example: If the file contains:

A boy is playing there. I love to eat pizza. A plane is in the sky.

Then the output should be: 4

c. Given the binary file CAR.Dat, containing records of the following class CAR type:

```
class CAR
{    int C_No;
     char C_Name[20];
     float Milage;
public:
     void enter( )
     {   cin>> C_No ;
         gets(C_Name) ;
         cin >> Milage;
     }
     void display( )
     {   cout<< C_No ;
         cout<<< Milage; }
     int RETURN_Milage( )
     {   return Milage; }
};
```

Write a function in C++, that would read contents from the file CAR.DAT and display the details of car with mileage between 100 to 150.