

## Second Unit Test in COMPUTER SCIENCE

Std. 12  
11-12-2015

Time : 1½ hr.  
M. Marks: 35

- 1.a) Write a user defined function in C++ to read the contents from a text file STORY.TXT, count and display the number of vowels present in it. [2]

- b) Assuming a binary file JOKES.DAT is containing object belonging to a class JOKE (as defined below). [3]

Write a user defined function in C++ to add more objects belonging to class JOKE at the bottom of file

JOKES.DAT

```
class JOKE
{ int Jokeid; //Joke identification number
  char Type[5]; //Joke Type
  char Jokedesc[255]; //Joke Description
public:
void Newjokeentry()
{ cin >>Jokeid ; gets (Type); gets (Jokedesc);
}
void showjoke( )
{ cout << Jokeid << " :" << Type << endl << Jokedesc << endl;
}
};
```

- c) Write a function to search and display details of all flights, whose destination is “Mumbai” from a binary file “FLIGHT.DAT”. Assuming the binary file is containing the objects of the following class [3]

```
class FLIGHT
{ int Fno; // Flight Number
  char From[20]; // Flight Starting Point
  char To[20]; // Flight Destination
public:
char* GetFrom( ) {return From;}
char* GetTo( ) {return To;}
void Enter( ) {cin>>Fno;gets(From); gets(To);}
void Display( ) {cout<<Fno<<": "<<From<<": "<<To<< endl;}
};
```

- d) Write function definition for SUCCESS( ) in C++ to read the content of a text file STORY.TXT, count the presence of word SUCCESS and display the number of occurrence of this word. [2]

NOTE:

- The word SUCCESS should be an independent word
- Ignore type cases (i.e. lower/upper case)

Example:

If the content of the file STORY.TXT is as follows:

**Success shows others what we can do with it. It is possible to achieve success with hard work. Lot of money does not mean SUCCESS.**

The function SUCCESS( ) should display the following:

3

- e) Write a definition for function Economic( ) in C++ to read each record of a binary file ITEMS.DAT, find and display those items, which costs less than 2500. Assume that the file ITEMS.DAT is created with the help of objects of class ITEMS, which is defined below.

[3]

```
class ITEMS
{
    int ID;char GIFT[20]; float Cost;
public:
void Get( )
{
    cin>>CODE;gets(GIFT);cin>>Cost;
}
void See( )
{
    cout<<ID<<" :" <<GIFT<<" :" <<Cost<<endl;
}
float GetCost( ) {return Cost;};
};
```

- f) Find the output of the following C++ code considering that the binary file CLIENTS.DAT exists on the hard disk with records of 100 members.

[1]

```
class CLIENTS
{
    int Cno;char Name[20];
public:
void In( ); void Out( );
};
void main( )
{
fstream CF;
CF.open("CLIENTS.DAT", ios: :binary | ios: :in);
CLIENTS C;
CF.read((char*) &C, sizeof(C));
CF.read((char*) &C, sizeof(C));
CF.read((char*) &C, sizeof(C));
int POS=CF.tellg( )/sizeof(C);
cout<<"PRESENT RECORD:"<<POS<<endl;
CF.close( );
}
```

- g) Observe the program segment given below carefully, and answer the question that follows: [1]

```
class PracFile
{
    int Pracno;
    char PracName[20];
    int TimeTaken;
    int Marks;
public:
    void EnterPrac ( );           // function to enter PracFile details
    void ShowPrac ( );           // function to display PracFile details
    int RTime() { return TimeTaken; }          // function to return TimeTaken
    void Assignmarks (int M) { Marks = M; }      // function to assign Marks
};

void AllocateMarks()
{
    fstream File;
    File.open ("MARKS.DAT", ios:: binary | ios ::in | ios::out);
    PracFile P;
    int Record = 0;
    while(File.read(( char*) &P, sizeof(P)))
    {
        if (P.Rtime () >50)
            P.Assignmarks(0);
        else
            P.Assignmarks(10);
        -----// statement 1
        -----// statement 2
        Record++;
    }
    File.close();
}
```

If the function AllocateMarks( ) is supposed to Allocate Marks for the records in the file MARKS.DAT based on their value of the member TimeTaken. Write C++ statements for the statement 1 and statement 2, where, statement 1 is required to position the file write pointer/put pointer to an appropriate place in the file and statement 2 is to perform the write operation with modified record.

2. **Write the output of the following program segments:**

a) #include <iostream.h> [2]

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

- b) #include<iostream.h> [2]
- ```
void main( )
{ int*PointerArray[10];
int marks[ ] = { 75, 68, 90, 34, 0, 10, 90, 45 };
for (int I=0; marks[ I ] !=0; I++)
{ PointerArray[ I ]=&marks[ I ];
*(PointerArray[ I ])+=5;
}
int index=0;
while (index<I )
{ int p =*(PointerArray[Index]);
if( p>60)
cout<<p<<',';
index++;
}
}
```
- c) #include<iostream.h> [2]
- ```
void main()
{ int Array[ ]= { 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 = 1; I < 5; I++)
cout<<Array[I - 1]<<" @ ";
cout<<endl;
}
```

3. a) Write a function REVCOL (int P[ ] [5], int M) in C++ to display the content of a two dimensional array, with each column content in reverse order. [3]

Note: Array may contain any number of rows.

For example, if the content of array is as follows:

<b>15</b>	<b>12</b>	<b>56</b>	<b>45</b>	<b>51</b>
<b>13</b>	<b>91</b>	<b>92</b>	<b>87</b>	<b>63</b>
<b>11</b>	<b>23</b>	<b>61</b>	<b>46</b>	<b>81</b>

The function should display output as:

**11 23 61 46 81**  
**13 91 92 87 63**  
**15 12 56 45 51**

- b) What will be the status of the following list after second pass of bubble sort and third pass of selection sort used for arranging the following elements in ascending order? [3]  
14, 10, -12, 9, 15, 35
- c) Write a function in C++ to search for a value in a given list (assuming that the elements in list are in ascending order) with the help of Binary Search method. The function should return -1 if the value not present else it should return position of the value present in the list. [2]
4. a) Write a program to perform push and pop operation in a linear stack. [3]  
b) Write a program to perform insert and delete operation in a static circular queue. [3]

-X-X-X-X-X-X-