

Name: _____ R. No. _____ Class/ Sec: _____ Date: _____ Invig. Sign _____

ATOMIC ENERGY CENTRAL SCHOOL, NARORA
 CLASS ^{XII} COMPUTER SCIENCE UNIT TEST FIRST 2018-19

MM: 50

TIME: 1:30 Hr.

General Instructions:

- All questions are compulsory and marks are mentioned in front of each question.
- Electronic devices are prohibited to use in the examination.
- Use Blue or Black Pen only.
- Don't write answer or objectionable things on question paper.

Q 1 (a) Differentiate between Typdef and Define in C++ (Any two differences). 4

(b) Give the possible output of the following C++ program. 4

```
#include<iostream.h>
#include<stdlib.h>
void main( )
{
    randomize ( );

    int p=2,q=22;
    int x=random(3)+4;
    int y=random(2)+2;
    for(int i=0;i<x;i++)
        cout<<'#';
    cout<<p<<'-' ;
    for(i=0;i<y;i++)
        cout<<'@';
    cout<<q<<endl;
}
```

- i) ##2-@22
- ii) ##2-@@22
- iii) #####2-@@22
- iv) ####2-@@@22

(c) Find the output of the following program: 4

```
#include <iostream.h>
void ChangeArray (int Number, int ARR[], int Size)
{
    for (int L = 0; L < Size; L++)
        if (L < Number)
            ARR[L] += L;
        else
            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] << endl;
    }
    void main()
    {
        int Array[] = {30, 20, 40, 10, 60, 50};
        ChangeArray (3, Array, 6);
        Show (Array, 6);
    }

```

Q 2 (a) List any two differences between Encapsulation and Data hiding with respect to OOPs.

(b) Define a class Student with the following information:

4

Private members

- rollno of type int
- Name of type character with size as 30
- Category of type string ("General", " Schedule caste", " Schedule Tribe", "Other Backward Cast")
- Fees of type Float

Public members

- A constructor to initialize category as a NULL and fees as 0.
- A function to input Roll number , name and category of the student, and to calculate fees of the student on the basis of category entered as :
 - Category 'General' or 'Other Backward Cast' then Fees is 5500
 - Category 'Schedule caste' then Fees is 900
 - Category 'Schedule Tribe' then Fees is 100

(c) Explain **Hybrid Inheritance**. Also give a suitable example.

4

Q 3 (a) Answer the questions (i) and (ii) after going through the following class.

4

class BUS

{ private:

char Pname[30], TicktNo[20];

float Fare;

public:

BUS()

//function 1

{ strcpy(Pname, "\0");

strcpy(TicktNo, "\0");

Fare=0; }

void Details()

//function 2

{ cout<<Pname<<endl<<TicktNo<<endl<<Fare<<endl; }

BUS(char * name, char *tno, float N);

//function 3

BUS(BUS &F);

// function 4

};

i) In OOP, what is function 3 referred to as? Also define this function.

ii) Define function 4 and write about its purpose?

- iii) Write a function in C++ to search and display how many times the words "He" and "She" occurs in a text named "REC.DAT". Words "He" and "She" are complete words. 4

(c) Differentiate between Text File and Binary File (Any two differences). 4

Q 4 (a) Answer the questions (i) to (iv) based on the following code : 4

```
class DRUG
{
    char catg[10];
    char DOF[10], comp[20];
public:
    DRUG( );
    void endrug( );
    void showdrug( );
};

class TABLET : public DRUG
{
protected:
    char tname[30], volabel[20];
public:
    TABLET( );
    void entab( );
    void showtab( );
};

class PAINKILLER : private TABLET
{
    int dose, usedays;
    char seffect[20];
public:
    void entpain( );
    void showpain( );
};
```

- i) How many bytes will be required by an object of TABLET?
ii) Write names of all the members accessible from function showpain() of class PAINKILLER.
iii) Write names of all members accessible from object of class PAINKILLER.
iv) Write names of all data members accessible from functions of class TABLET.
- (b) Write a function in C++ to read a text file RECORD.DAT and count the number of lines contained in it. 4
- (c) Differentiate between Formal Parameters & Actual Parameters. (Any two differences). 4
- (d) Rewrite the following program after removing the syntactical errors(if any). Underline each correction. 2

```
#include<iostream.h>
int sum(int n)
{
    int s=0 k;
    if(n= =0)
        { return 0;
        }
    else

        k=n%10;
        s=s+k+sum(n/=10);
    }

    return s;
}
void main( )
{
    clrscr();
    int i,l;
    cout<<"\n enter any number\n";
    cin>>i;
    l=sum(i), cout<<l;
    getch();
}
```
