

FIRST PRE-BOARD EXAMINATION, 2016 – 17**Sub. : Computer Science (083)****Time : 3 Hrs.]****Class – XII****[M. M. : 70**

- Note.* (i) All questions are compulsory.
(ii) Programming Language: C++

- Q.1 a) Which identifiers cannot be used for naming variable, constants or functions: 2
_while, If, Switch, Num1, 20_val, val+sum, sec val, do
- b) Name the header files needed in using the following library functions: 1
i) fabs() ii) setw()
- c) Re-write the following code segment removing the errors, underlining each correction: 2

```
#include<iostream.h>
class Student{
intnum ==0;
    char name[10]
public:
    void getdata(){
cin>>>num;
getline(name,10);
    }
};
void main(){
Student obj;
getdata();}
```
- d) Find the output of the following program: 2

```
#include <iostream.h>
void fun( int p, int *q )
{
    p = *(q) += 2;
}
void main()
{
    int x, b = 5, a[2] = { 10, 20 };
    for( x = 1; x < 3 ; x++)
    {
        fun( a[x - 1], &b);
        cout<< "\n" << a[x - 1] <<" : " << b;
    }
}
```
- e) Find the output of the following program: 3

```
#include<iostream.h>
void in( int x, int y, int&z)
{
    x+=y;
    y--;
```

```

        z*=(x-y);
    }
void out( int z, int y, int&x)
{
    x-= y;
    y++;
    z/=(x+y);
}
void main( )
{
    int a= 20, b=30, c=10;
    in (a, c, b);
    cout<<a<<"#"<<b<<"#"<<c<<"#"<<endl;
    out (b, c, a);
    cout<<a<<"@"<<b<<"@"<<c<<"@"<<endl;
    in (a, b, c);
    cout<<a<<"$"<<b<<"$"<<c<<"$"<<endl;
}

```

f) Predict the output of the following program and give justification

```

#include<iostream.h>
#include<stdlib.h>
void main()
{
    int low = 10, p=5;
    randomize();
    for(int i=1;i<=4;++i)
    {
        cout<<(random(p)+low);
        cout<<":";
        p--;
    }
}

```

i) 13:13:14:10:ii) 14:14:11:11 iii) 14:13:11:11: iv) 14:13:13:11:

- Q.2 a) Explain the concept of function overloading? Give example code also.
 b) Answer the questions after going through the following code:

```

class Master{
char name[10];
    int n;
    public:
    Master() {n=50;
    cout<<"Object created"<<n;
}
    Master(Master &o){.....} ;//constructor 2
};

```

- i) What will be the output of the statement: Master obj;
 ii) Write complete definition of Constructor 2
 c) Answer the questions after going through the following code:
 class WORLD
 { private :

```

float A;
protected :
char B[20];
int C;
public:
void READ( );
void WRITE( ); };
class COUNTRY: public WORLD
{ long double D;
protected:
long E;
public:
void INPUT( );
void OUTPUT( ); };
class STATE : private COUNTRY
{ private:
short F;
public:
void INSTATE( );
void OUTSTATE( ); };

```

- i) Which type of inheritance has been illustrated in the above code.
- ii) Name the data members which can be accessed by the objects of STATE class.
- iii) Name the member functions that can be accessed by the objects of STATE class.
- iv) How many bytes will be occupied by an object of class STATE ?

d) Define a class **Patanjali** with the following information:

4

Private members:

- i) productid of type integer
- ii) productname of type string
- iii) price type integer
- iv) quantity as integer
- v) A function getTotal() that returns product of price and quantity.
- vi) A function getDiscount() that returns the value of discount as 20% of the total cost if the total cost (price*quantity) exceeds Rs 5000.

Public member:

- i) A function setData() that acquires values from user inputs.
- ii) A function display() that displays productid, productname, total price as a function call of getTotal() and discount as a call to getDiscount().

Q.3 a) Write c++ function swap() that accepts an array and its size as arguments and change the values divisible by 3 or 5 to 100 and rest with 200 For example the following array

3

10	50	14	24	16	55
----	----	----	----	----	----

Should become

100	100	200	100	200	100
-----	-----	-----	-----	-----	-----

- b) Write a function PUSHBOOK() in C++ to perform insert operation on a Dynamic Stack, which contains Book_no and Book_Title. Consider the following definition of NODE, while writing your C++ code. 4
- ```

struct NODE
{
int Book_No;
char Book_Title[20];
NODE *Next;
};

```
- c) An array P[1..15][1..10] is stored in memory with each element occupying 4 bytes. Find the address of the element P[12][9] if the base address is 1500. i) Row wise ii) column wise. 3
- d) Write a function dispsumelem(int P[][5],int size) that prints the sum of the elements of middle rows and columns. 2
- e) Evaluate the following postfix expression using a stack. Also draw the intermediate steps involved in the computation: True, False, NOT, OR, False, True, OR, AND 2
- Q.4 a) Write a c++ function Count\_3word() to count the word in "ARTICLE.txt" which are having three characters in it. 2
- b) Write c++ function display\_male() that displays the details of all the Male members of the file "society.dat" containing the details from the following class: 3
- ```

class Society {
int memid;
char memname[20];
char gender[10]; // "Male" or "Fem"
public:
void setdata();
void display();
char * rgender(){ return gender;}
};

```
- c) Observe the following program segment and write the output for **fp** variable: 1
- ```

#include<fstream.h>
class Student{
int id; char name[20], char hobby[20];
public:
void entry();
void modify();
};
void main()
{
Student me;
fstream file;
file.open("info.dat",ios::in|ios::out|ios::binary);
file.write((char *) &me, sizeof(me));
file.write((char *) &me, sizeof(me));
}

```

