TCS/TIT–303

B. TECH. (CSE/IT)
(THIRD SEMESTER)
MID SEMESTER EXAMINATION, 2018
OOPs USING C++
Time : 1:30 Hours
Maximum Marks : 50

Note : (i) This question paper contains two Sections.

(ii) Both Sections are compulsory.

Section—A

1. Find the output :   (1×5=5 Marks)

   (a) int a = 10 + 20/30% 4-5 && 7 ! 2; The value of a is ....

   (b) # include <studio.h>
   ```
   # include <stdbool.h>
   int main ( )
   {
        int a = 10, b = 4;
        bool res = ((a = = b))&& cout
                                    <<"Hello");
   cout <<res;
   return 0;
   }
   ```

(c)
```
#include<isotream>
using namespace std;
int main ( ) // Hint : int is taking 4 byte
{
    int a[]=\ {10, 15, 20, 25, 30};
    int *p1, *p2;
    p1 = a;
    p2 = &a[3];
    cout <<p2-p1;
    return 0;
}
```

(d)
```
#include<iostream>
using namespace std;
void show(int a, int b = 10)
{
    cout <<a + b;
}
int main ( )
{
    show (20, 30);
    return 0;
}
```

(e)
```
#include<iostream>
using namespace std;
int n = 20;
int main ( )
```

```
{
    int n = 40;
    cout <<n;
    cout<< "\n"<<::n;
    {
        int n = 60;
        cout<<n;
        cout <<::n;
    }
    return 0;
}
```

2. Attempt any *five* parts :   (3×5=15 Marks)

(a) Difference between Class and Structure in C++.

(b) How do the following statement differ ?
   (i) int const *ptr;
   (ii) int *const ptr;

(c) What is manipulator ? Give example of at least three manipulator.

(d) Explain insertion and extraction operator with diagram.

(e) Explain type casting (implicit and explicit) with example.

(f) What is the importance of destructor in the program ?

P. T. O.

Section—B

3. Attempt any *two* parts of choice from (a), (b) and (c). (5×2=10 Marks)

   (a) Difference between Procedural Oriented and Object Oriented Programme (Don't discuss principle of OOPs).

   (b) Define Inline Function. What is the need of making a function inline with example.

   (c) Define a class in C++ with the following description :

   Private Members

   A data member Flight number of type integer

   A data member Destination of type string

   A data member Distance of type float

   A data member Fuel of type float

   A member function CALFUEL() to calculate the value of Fuel as per the following criteria :

Distance	Fuel
<=1000	500
more than 1000 and <=2000	1100
more than 2000	2200

   Public Members

   A function FEEDINFO ( ) to allow user to enter values for Flight Number.

Destination, Distance and call function CALFUEL ( ) to calculate the quantity to Fuel

A function SHOWINFO ( ) to allow user to view that content of all the data members

4. Attempt any *two* parts of choice from (a), (b) and (c). (5×2=10 Marks)

   (a) Define a class Time that has three integer data members for hours, minutes and seconds, define a number function to read the values, member function to add two time objects, member function to display time in HH : MM : SS format. Write a main function to create two time objects, add them and display the results in HH : MM : SS format.

   (b) Differentiate between Call by value, Call by address and Call by reference with the help of program.

   (c) Define Constructor. Write the properties of a Constructor. Explain its types with example of each.

P. T. O.

5. Attempt any *two* parts of choice from (a), (b) and (c). (5×2=10 Marks)

(a) Explain Static data member and Static member function. Write a program to count number of objects created in a class.

(b) Write a function POWER ( ) to raise a number m to a power n. The function takes a double value for m and an integer value for n and return the result correctly. Use default value of 2 for n to make the function to calculate square when this argument is omitted. Write a main function to read values for m and n from the user.

(c) Can we use the same function name for a member function of a class and an outside function in the same program file ? If yes, how are they distinguished ? If no, give reasons.