

**This question paper contains 10 printed pages.**

**Your Roll No. ....**

**No. of Ques. Paper : 8174 J**  
**Unique Paper Code : 32345102**  
**Name of Paper : Introduction to Programming (OC)**  
**Name of Course : Computer Science : Generic Elective**  
**Semester : I**  
**Duration : 3 hours**  
**Maximum Marks : 75**

**(Write your Roll No. on the top immediately  
on receipt of this question paper.)**

**Question No. 1 is compulsory.**

**Attempt any five questions out of Q. No. 2 to Q. No. 8.**

**Parts of a question must be answered together.**

- (a) Write a C++ statement using built-in function which is equivalent to the mathematical expression  $5^3$ . 1
- (b) Suppose a and b are integer variables having values 8 and 5 respectively. What will be the value of the following arithmetic expression? 1

`cout<<2*b+3*(a-3);`

- (c) What will be the output produced on execution of the following code snippet : 1

```
int speed=5;
int x=--speed;
cout<<x;
```

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- (d) Write a statement in C++ that declares a 10 element character array named firstName. Also, initialize it with an empty string.
- (e) Write statements in C++ to open a file named text1.txt in output mode and write the value of an integer variable sum having value 20.
- (f) What will be the output produced on execution of the following code snippet :

```
int num[2][2] = {{3, 8, 6}, {9, 4, 7}};
int a, b;
a = num[1][2];
b = num[2][2];
c = a + b;
cout << c;
```

- (g) Write C++ statements for the following :
- Declare a structure Course having two integer members as courseNo and fee.
  - Define and initialize a structure variable course1 such that courseNo and fee should be initialized to 1000 and 5000 respectively.
  - Display the values of members of course1.
- (h) Define a function product that accepts two integer numbers as input parameters and returns their product.
- (i) What is wrong with the following code snippet?

```
class First
{
```

```

int a;
First(int n)
{
    a = n;
}

};

int main ()
{
    First obj1(1);
    return 0;
}

```

(j) Write a C++ statement that :

- (i) Declares a one dimensional array called Num of type integer.
- (ii) Initializes it with marks of four subjects as 87, 69, 71 and 53.
- (iii) Display total marks. 4

(k) Write C++ statement for the following :

- (i) Declare a class Animal having one character array data member color. 4
- (ii) Derive a class Type publicly from class Animal having another character array data member Breed. 4

(a) A point on the two-dimensional plane can be represented by two numbers: an x coordinate and a y coordinate. For example, (4, 5) represents a point 4 units to the right of the vertical axis, and 5 units up from the horizontal axis. The sum of two points can be defined as a new point whose x

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coordinate is the sum of the x coordinates of the two points, and whose y coordinate is the sum of the y coordinates. Write a C++ program that uses a structure called point to model the point. Declare three variables of the declared structure point. Accept the values of two of these variables from the user. Set the third point structure variable equal to the sum of the other two, and display the value of the new point.

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(b) Write a C++ program using a function swap () which accepts two integer variables x and y as an argument and swaps them without using a third variable. Call this function from main( ).

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3. (a) What will be the output produced on execution of the following code snippet :

```
int x = 10;
do{
    cout<< x <<endl;
}while(x<=10);
```

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(b) Identify the error in the following code snippet :

```
float x = 20.2f;
switch (x) {
    case 20.1f:
        cout<< "Case 1" <<endl;
    case 20.2f:
```