

DipIETE – ET/CS (Current & New Scheme)

Time: 3 Hours

JUNE 2015

Max. Marks: 100

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE: There are 9 Questions in all.

- Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.
- The answer sheet for the Q.1 will be collected by the invigilator after 45 minutes of the commencement of the examination.
- Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.
- Any required data not explicitly given, may be suitably assumed and stated.

Q.1 Choose the correct or the best alternative in the following: (2×10)

- a. Every object has a default _____
- (A) Constructor (B) Destroyer
(C) Initiator (D) Creator
- b. Which of the following is not a valid I/O function in C++?
- (A) cin (B) putc
(C) switch (D) cout
- c. Which of the following is not a valid file extension of C++ program source code?
- (A) .cpp (B) .c
(C) .rh (D) .he
- d. A member function in an object cannot be of _____ type.
- (A) public (B) private
(C) friend (D) enemy
- e. Which of the following cannot be overloaded?
- (A) A function (B) An operator
(C) A key word (D) An object
- f. Which of the following has higher precedence for scope binding?
- (A) Global variable (B) Extern variable
(C) Local (D) Auto
- g. Choose the incorrect answer. A Null character _____.

Code: DE70/DC56/ Subject: OBJECT ORIENTED PROGRAMMING WITH C++
DE122/DC106

- (A) is used as string terminator (B) is '\0'
(C) is not a printable character (D) is a printable character
- h. A virtual function is required to implement _____
(A) pointer (B) polymorphism
(C) exception handling (D) polymer
- i. A class can be _____
(A) Recursive (B) Self referential
(C) Nested (D) Derived
- j. Which of the following can be passed as parameter to a function?
(A) Object (B) Function
(C) Structure (D) All of these

Answer any FIVE Questions out of EIGHT Questions.
Each question carries 16 marks.

- Q.2** a. Write four advantages of using an Object Oriented Programming language. (4)
b. Differentiate between an object and a class with a suitable example. (4)
c. Write an object based program to read a positive integer n, compute the sum of first n natural number and then output "Sum of first natural number is =" <actual computed sum>. (8)
- Q.3** a. Define a class *strcmp* that accepts two strings as input and compares the two string and returns a value -1, 0 or 1 depending upon whether first string is less than or equal to or greater than the second string. (6)
b. Give four basic differences between a pointer and an array. (4)
c. What do you mean by data abstraction and encapsulation? (6)
- Q.4** a. What does 'this' pointer stand for? What is the advantage of 'this' pointer? (4)
b. What is typecasting? What are explicit and implicit type conversions? Explain your answer with a suitable example. (6)
c. Explain the scope of private, public and protected member function. (6)
- Q.5** a. Which operators cannot be overloaded? Write steps to overload + operator so that it can add two complex numbers. (8)
b. Write a program in C++ that display entered string into reverse order. (8)

Q.6 a. What is base class? How is it relevant in multiple inheritances? Does a constructor/destructor also inherited from base class to its derived class? **(8)**

b. What is the difference between ‘.’ and “::” operator? Explain the concept using a suitable example. **(8)**

Q.7 a. Define polymorphism. Write a program to demonstrate implementation of polymorphism. **(8)**

b. Explain the working of the following program code: **(8)**

```
#include <iostream>
using namespace std;
double division(int a, int b)
{
    if( b == 0 ) {throw "Division by zero condition!";}return (a/b);
}
int main ()
{
    int x = 50;
    int y = 0;
    double z = 0;
    try {
        z = division(x, y);
        cout << z << endl;
    } catch (const char* msg) { err << msg << endl;}
    return 0;
}
```

Q.8 a. What is difference between opening a file with constructor function and with open() function? Explain your answer with a suitable example. **(8)**

b. What is Standard Template Library? How is it different from the C++ Standard Library? **(8)**

Q.9 Write short note on any **TWO** of the followings: **(8×2)**

- (i) Exception Handling
- (ii) Class template
- (iii) I/O Streams and its handlin