

DIPIETE – ET/CS

Time: 3 Hours

DECEMBER 2013

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. The operator << is called _____.
- (A) an insertion operator (B) put to operator
(C) both (A) or (B) (D) none of these
- b. The fields in a class of a C++ program are by default _____.
- (A) Protected (B) Public
(C) Private (D) None of these
- c. Which of the following cannot be passed to a function?
- (A) Reference variables (B) Arrays
(C) Class objects (D) Header files
- d. An exception is caused by _____.
- (A) a hardware problem (B) a problem in the operating system
(C) a syntax error (D) a run time error
- e. _____ allows you to create a derived class that inherits properties from more than one base class.
- (A) Multilevel inheritance (B) Hybrid Inheritance
(C) Hierarchical Inheritance (D) Multiple inheritance
- f. _____ feature in OOP allows reusing code.
- (A) Polymorphism (B) Inheritance
(C) Encapsulation (D) Data hiding

b. What is friend function? What are merits and demerits of using friend functions? Show by an example how friend function is used in C++. (8)

Q.5 a. What are destructors? List atleast five special characteristics of the destructors. (8)

b. What is operator overloading? Why is it necessary to overload an operator? List atleast four rules for operator overloading. (8)

Q.6 a. What is multiple inheritance? Discuss the syntax and rules of multiple inheritance in C++. How can you pass parameters to the constructors of base classes in multiple inheritance? Explain with suitable example. (8)

b. How does inheritance influence the working of constructor and destructor? Given the following set of definitions. (8)

```
class x
{
};
class y: public x
{
};
class z: public y
{
};
z obj;
```

What order will the constructor and destructor be invoked?

Q.7 a. Explain the meaning of polymorphism. Describe how polymorphism is accomplished in C++ taking a suitable example. (8)

b. What is an exception? How is it handled in C++? What are the advantages of using exception handling mechanism in a program? (8)

Q.8 a. What do you mean by template in C++? Briefly explain its various types. List various limitations of using a template. (8)

b. Write a function template for sorting a list of arrays. (8)

Q.9 a. Describe the concept of error handling during file operations. Explain various error handling functions in detail with the help of an example. (8)

b. Explain the following member functions which are used for I/O operations on files.

(i) put	(ii) get	
(iii) read	(iv) write	(8)