ROLL NO	
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Code: DE70/DC56 Subject: OBJECT ORIENTED PROGRAMMING WITH C++

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

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- g. _____are bound dynamically at run time.
 - (A) static class

- (B) virtual functions
- (C) friend functions
- (**D**) inline functions
- h. Which of these C++ feature allow you to create classes that are dynamic in terms of the types of data they can handle?
 - (A) Inheritance

- **(B)** Templates
- (C) Polymorphism
- (D) Information hiding

- i. The output of
 {
 int a = 5;
 int b = 10;
 cout << (a>b?a:b);
 }
 - **(A)** 5

(B) 10

(C) Syntax error

- **(D)** None of these
- j. int a = 10;
 void main()
 {
 int a = 20;
 cout << a << ::a;
 }
 </pre>

The output of this program is

(A) 10 20

(B) 20 10

(C) Syntax error

(D) 20 20

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

- Q.2 a. Compare and contrast Procedure-oriented Programming with Object-oriented programming.(8)
 - b. Write a program to determine whether the number entered by the user is prime or not. (8)
- Q.3 a. Write a program in C++ for multiplication of two matrices. (8)
 - b. What are structures in C++? How does a structure differ from an array? Explain. (8)
- Q.4 a. Explain the concept of a class in object-oriented paradigm. How does it accomplish data hiding?(8)

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b.	What is	friend	function?	What	are	merits	and	demerits	of using	friend
	functions	s? Show	by an exar	nple ho	ow fr	riend fur	nctior	is used in	n 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)