	<u>Unean</u>
Name :	(4)
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Inviailator's Signature:	

2012

OBJECT ORIENTED PROGRAMMING AND UML

Time Allotted: 3 Hours Full Marks: 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP - A (Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following:

 $10 \times 1 = 10$

 i) What happens when the following program is compiled and executed with the command? class Demo

public static void main (String args[])
{
 if(args.length>0)
 System.out.println(args.length);
}

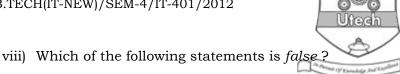
- a) The program compiles and runs but does not print anything
- b) The program compiles and runs and prints 0
- c) The program compiles and runs and prints 1
- d) The program compiles and runs and prints 2

4461 [Turn over

ii)				j) { } can be overloaded		
	usii	ng which of the following	me	thods?		
	a)	int func(int i, int i, int l	c) {}			
	b)	int func(float i, float j) {	}			
	c)	float func(int i, int j) {}				
	d)	int func(int a, int b) {}				
	e)	float func(int i, int j, flo	at k	() {}		
iii)	Wh	Thich class is used to create a Thread?				
	a)	Thread	b)	Runnable		
	c)	Thread Group	d)	Synchronization.		
iv)	What happens when the following program is compiled					
	and executed with the command?					
	public class A {					
	void A ()					
	{					
		System.out.println ("Class A");				
	}					
	public static void main (string args[])					
	{					
		New A();				
	}					
	}					
	a)	Class A				
	b)	Compilation fails				
	c)	An exception is thrown	at l	ine 2		
	d)	An exception is thrown	at 1	ine 6		
	e)	The code executes with	no	outnut		



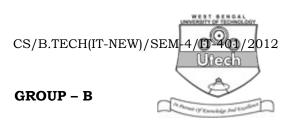
- v) Providing access to an object only through its member functions, while keeping the details private is called
 - a) Information hiding
 - b) Encapsulation
 - c) Inheritance.
- vi) Which of the following is correct:
 - a) String temp[]=new String {"x", "y", "z"};
 - b) String temp[]={"x", "y", "z"};
 - c) String temp ={"x", "y", "z"};
 - d) String temp[]={"x", "y", "z"};
- vii) Under what situations do you obtain a default constructor?
 - a) When you define any class
 - b) When the class has no other constructors
 - c) When you define at least one constructor
 - d) non of these.



- a) Java supports multithreaded programming
- b) Threads in a single program can have different properties
- c) Multiple threads can manipulate files and get user input at the same time
- d) Two threads can never act on the same object at the same time.
- Threads are created and started with different e) methods.
- The concept of multiple inheritance is implemented in ix) Java by
 - Extending two or more classes a)
 - Extending one class and implementing one or more b) interfaces
 - c) Implementing two or more interfaces
 - d) All of these.
- The parent class of all the exceptions in java is x)
 - Throwoable a)
- Throw b)
- Exception c)
- Throws. d)
- Which tool is used to execute an applet? xi)
 - a) java

- b) javac
- appletviewer c)
- appletrunner. d)

4461



(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. Define a class *Motor Vehicle* as described below:

Data members:

- (i) modelName
- (ii) modelNumber
- (iii) modelPrice

Methods:

display() method to display the name, price and model number.

Define another class named Car that inherits the class Motor Vehicle and has the following:

Data members:

(i) discountRate

Methods:

- (i) Display() method to display the Car name, Car model number, Car price and the discount.
- (ii) Discount () method to compute the discount.

Write suitable code for creating the classes *Motor Vehicle* and *Car* with suitable constructors and test it.

3.	Wri	te a small program to synchronize among two threads.			
	Wha	at is thread priority? 3 + 2			
4.	Hov	do we define try and catch block? Is it essential to			
	cato	th all types of exception ? Explain. 3 + 2			
5.	Hov	How can you call a constructor from another constructor?			
	Wha	at is Late binding? 4 + 1			
5.	Can an abstract method have a constructor ? Explain. What				
	is fi	nal keyword? 2 + 3			
		GROUP - C			
		(Long Answer Type Questions)			
		Answer any <i>three</i> of the following. $3 \times 15 = 45$			
7.	a)	What is a friend function? Give an example.			
	b)	Describe briefly Class diagram and collaboration			
		diagram.			
	c)	What is the difference between copy constructor and			
		assignment constructor? $5 + 5 + 5$			
3.	a)	What is 'super' keyword in object oriented			
		programming?			
	b)	Describe briefly operator overloading. How is it different			
		from overriding?			
	c)	Describe briefly inheritance. $3 + (4 + 3) + 5$			



- 9. a) What is the difference between multi-valued inheritance and hybrid inheritance?
 - b) Explain the significance of using template.
 - c) Write a C++ program to implement the different types of constructor.
 - d) How will you create a object using constructor?

3 + 4 + 5 + 3

- 10. a) Write a short note on "This" keyword.
 - b) What is the difference between namespace and unnamed namespace?
 - c) Describe briefly state chart activity.
 - d) What is the difference between implementation diagram and component diagram? 4 + 3 + 4 + 4
- 11. a) Write down the life cycle of applet.
 - b) What is the difference between abstract class and interface?
 - c) What is meta class?
 - d) Write C++ program to implement the operator overriding. 4 + 4 + 3 + 4