MANGALORE INSTITUTE OF TECHNOLOGY & ENGINEERING
(A Unit of Rajalaxmi Education Trust®, Mangalore)
Autonomous Institute affiliated to VTU, Belagavi, Approved by AICTE, New Delhi
Accredited by NAAC with A+ Grade & ISO 9001:2015 Certified Institution

Model Question Paper

Fourth Semester BE Degree Examination

Object Oriented Concepts with Java Programming

Time: 3 Hours **Max. Marks: 100**

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M: Marks, L: RBT (Revised Bloom's Taxonomy) level, C: Course outcomes.

Q. No.		Module1	M	L	C
1	a	Write a program to assign a suitable value to the variable of every primitive (or basic data type) available in Java and print the size of each primitive data type.	10	L3	CO1
	b	Develop a JAVA program to add TWO matrices of suitable order N (The value of N should be read from command line arguments).	10	L3	CO1
OR					
2	a	Write a Java program that takes input from the user, asking them to enter a month number (1-12). The program should then use a switch case to determine the corresponding month name and print it. If the entered month number is not between 1 and 12, the program should output "Invalid month number."	10	L3	CO1
	b	Define an array. Write the syntax for array declaration and initialization. Create an array of 10 integers and initialize each array element to a random value between 1 10 (both inclusive)	10	L3	CO1
	Module 2				
3	a	Differentiate between "Class" and "Object". Write a java program to define a class named car with attributes (brand, model, year), a constructor to initialize the object, and a method to display information about the car.	10	L3	CO2
	b	What is the meaning of a final variable, a final method, and a final class in Java? Design a Final Java class that cannot be extended. This should have a final method getCircumference() which returns the circumference for the	10	L3	CO2

		given radius as its input and uses the Final mathematical constant PI defined in the same class to compute the same.			
		OR			
4	a	What is method overloading and constructor overloading? Write a program to demonstrate method overloading based on number of parameters	10	L3	CO2
	b	Design a class hierarchy – The base class is Animal, the derived class is Dog, and the third class is the test class. The base has a private data member name and an abstract protected method makeSound() which is dummy. Dog defines a concrete body for this method (barking). The test class instantiates a dog object and tests all of the above – printing the name of the dog (with a public method in the class Animal) and the sound it makes.	10	L3	CO2
		Module 3			
5	a	Define Inheritance. Write a program to explain the Multilevel hierarchy	10	L3	CO3
	b	Discuss i) Super and ii) abstract class with examples	10	L3	CO3
		OR			
6	a	What is method overriding? Explain how it allows Java to support run-time polymorphism with a very simple example.	10	L3	CO3
	b	What is Interface? What are its benefits? Write a program and Explain how Interface is implemented in java.	10	L3	CO3
		Module 4			
7	a	Define Exception. Write a program which contains one method which will throw IllegalAccessException and use proper exception handlers so that exception should be printed in the calling function.	10	L3	CO4
	b	Create two packages, package1 and package2. In package1, define a class with members having public, protected, default, and private access modifiers. In package2, create another class to import and access the members of the class from package1. Write a Java program to demonstrate which members can be accessed and explain the output.	10	L3	CO4
		OR			
8	a	What is checked and uncheck exception? Write a java program to illustrate Nested try catch statement	10	L3	CO4
	b	Write a Java program to demonstrate chained exceptions. Create a scenario where an initial exception causes another exception to occur	10	L3	CO4
		Module 5			

9	a	What is Thread? Write a sample program and explain two different ways of creating a Thread in Java.	10	L3	CO5
	b	Define a class with three threads, first with a minimum priority, second with a normal priority, and a final one with maximum priority. Use the in-built priorities from the Java Thread class. Each thread should print its name, priority, and exit.	10	L3	CO5
OR					
10	a	Implement a method that accepts both primitive and wrapper types as arguments, showcasing autoboxing and unboxing in expressions and method calls	10	L3	CO5
	b	Use type wrapper classes (Character, Boolean, and numeric type wrappers) to create objects, perform operations, and display their values.	10	L3	CO5