



Second Semester MCA Degree Examination, Dec.2023/Jan.2024

## Object Oriented Programming using Java

Time: 3 hrs.

Max. Marks: 100

- Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.  
2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module – 1			M	L	C
Q.1	a.	Explain the features of Java language.	10	L2	CO1
	b.	List and briefly explain the key attributes of object oriented principles.	6	L2	CO1
	c.	Write a java program to demonstrate over loading of constructor.	4	L3	CO2
<b>OR</b>					
Q.2	a.	Write the uses of static keyword. Write program to demonstrate the each use of the static keyword.	10	L3	CO2
	b.	Define a class. Write a java program to check whether the given number is even or odd using class and object.	5	L3	CO2
	c.	What is method overloading? Write a java program for method overloading.	5	L3	CO2
<b>Module – 2</b>					
Q.3	a.	Define inheritance. Write a program to demonstrate the different types of inheritance.	10	L3	CO4
	b.	Write a Java program for method overriding.	5	L3	CO4
	c.	Explain the abstract class with an example code.	5	L3	CO4
<b>OR</b>					
Q.4	a.	Mention the uses of final keyword. Write a Java program for each use.	10	L3	CO4
	b.	Explain how to achieve run time polymorphism in Java with an example.	5	L3	CO4
	c.	List out the differences between abstract class and final class.	5	L2	CO4
<b>Module – 3</b>					
Q.5	a.	What is multiple inheritance? How multiple inheritance is achieved in Java? Write a program to calculate the area of circle and triangle by implements interface.	10	L3	CO4
	b.	Write the difference between abstract class and an interface.	5	L2	CO3
	c.	Write a program to implement nested interfaces.	5	L2	CO3
1 of 2					

## OR

Q.6	a.	What is interface? How to extend an interface explain with example program.	7	L3	CO3
	b.	Define a package. Explain the creating of package and importing package with an example.	8	L3	CO3
	c.	List out the access specifiers in Java and given a table for visibility of these methods within the package and outside the package.	5	L2	CO3

## Module – 4

Q.7	a.	What is exception? Explain the exception handling mechanism in Java with suitable example.	10	L3	CO5
	b.	Write the benefits of exception handling.	5	L2	CO5
	c.	List out the Java built in exceptions.	5	L2	CO5

## OR

Q.8	a.	Write a program to demonstrate nested try block in exception.	7	L3	CO5
	b.	Write a Java program to create a user defined exception.	6	L3	CO5
	c.	Write the hierarchy of exception and explain briefly.	7	L2	CO5

## Module – 5

Q.9	a.	Explain the life cycle of an applet with a neat diagram and example code.	10	L2	CO6
	b.	Write the differences between applet and application program.	5	L2	CO6
	c.	Write a Java program to pass parameters to an applet.	5	L3	CO6

## OR

Q.10	a.	Describe the key components of a Java swing GUI application and explain their roles in creating a graphical user interface.	10	L2	CO6
	b.	Explain briefly different layout manager types in swings.	10	L2	CO7

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