JHARKHAND Rai University
RANCHI

End Semester/Reappear (Semester V) Examination December, 2024

Programme: BCA

Course: Programming in Java **Full Marks: 70**

Course Code: 3C.301 **Time: 3 Hrs.**

Enrolment no. _____

Q. No.	Questions	CO	Bloom Taxonomy Category	Marks
	Section I			
1	**Short Answer type questions**			**4 x 5 = 20**
a	What are the different features of Java? Explain them briefly.	CO1	Remember	
	or			
	Write a simple Java program that declares and initializes variables of different data types and performs arithmetic operations on them.	CO1	Apply	
b	Define abstract class. How an abstract class is different from a normal class	CO2	Remember	
	or			
	What is a two-dimensional array? Write a Java program to create a two-dimensional array of size 3X3 and transpose its elements.	CO2	Understand	
c	Write a simple Java program to create a new thread that prints all the odd numbers from 20 to 40. Explain the code briefly.	CO3	Apply	
	or			
	Explain the concept of garbage collection in Java.	CO3	Understand	
d	Write a Java program using Swing to create a simple JFrame with a JButton and JLabel component.	CO4	Understand	
	or			
	List three components commonly used in AWT programming.	CO4	Understand	
	Section II			
Long Answer type questions				**3 x 10 = 30**
2	Describe the lifecycle of a thread in Java. Write a simple program to create and start a thread, and explain how the thread moves through its lifecycle stages.	CO3	Understand	
	or			
	How priority of the thread can be set? Explain with proper example.	CO3	Understand	
3	Explain how access modifiers control access to class members in Java. Provide a diagram of the access modifier.	CO2	Understand	
	or			
	Describe the method overloading in Java? Write a simple Java class with two overloaded methods named print that print different messages.	CO2	Apply	
4	Explain Layout Manager with its need in Java Program. Classify the different types of layout managers available in java AWT.	CO4	Understand	
	or			
	Write a swing program to create a button in a Jframe.	CO4	Understand	
	Section III			
	Application based questions			**1 x 20 = 20**
5	Define a class in Java named Product with variables for storing a product name, unit price, and quantity. Add methods to calculate the amount (unit price * quantity), and to display the product's details. Write a Java program to create an object of the Product class, input the Product's details, and display the calculated amount and product details.	CO2	Create	
	or			

	Explain the concept of loop control statements in Java, including break and continue. Write a Java program that uses a for loop to print numbers from 20 to 50, but skips multiples of 7 and stops the loop if the number is greater than 45.	CO2	Create	

COURSE OUTCOME

At the end the course the candidate will able to

CO1: Use the syntax and semantics of java programming language and basic concepts of OOP.

CO2: Develop reusable programs using the concepts of inheritance, polymorphism, interfaces and packages.

CO3: Apply the concepts of Multithreading and Exception handling to develop efficient and error free codes.

CO4. Design event driven GUI and web related applications which mimic the real word scenarios.