Course with code:(CS115BIC/CS125BIC)–BASICS OF JAVA PROGRAMMING
Semester – II
CIE-I (EVEN SEMESTER 2023-2024)

Time: 90 Minutes **Max. Marks:50**

Q. No.	Questions	Marks	BTL	CO
1	List and explain the four pillars of Java with real world example.	10	1	1
2a	Define Array.List different types of array.Write a Java program to multiply two given matrices. (Note:Program should check for compatibility for multiplication)	7	3	2
2b	Explain classes and objects with suitable example code in Java.	3	2	1
3	Define Strings.Explain the different types of String operators in detail.	10	1	1
4 a	Write a Java program to find the Fibonacci series using recursive and non recursive functions.	6	3	2
4 b	List the difference between static (class) method and non static(instance) method?	4	2	2
5	Write a Java program to perform addition and subtraction of two complex numbers by creating a class adding required methods for complex numbers.	10	3	2

Course Outcomes: After completing the course, the students will be able to:-	
CO1	Demonstrate the fundamental concepts of operating system like process management, file management, memory management and issues of synchronization.
CO2	Analyze and interpret operating system concepts to acquire a detailed understanding of the course
CO3	Apply the operating systems concepts to address related new problems in computer science domain.
CO4	Design or develop solutions using modern tools to solve applicable problems in operating systems domain.
CO5	Extend the theoretical knowledge acquired through the course to demonstrate skills like investigation, effective communication, working in team/Individual, following ethical practices by implementing operating system concepts/applications and engage in lifelong learning.

Marks Distribution

CO–Course outcomes				BTL- Blooms Taxonomy Level					
CO1	CO2	CO3	CO4	L1	L2	L3	L4	L5	L6
23	27	0	0	20	7	23	-	-	-

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Department of Computer Science and Engineering

Course with code:(CS115BIC/CS125BIC)–BASICS OF JAVA PROGRAMMING
Semester – II
CIE-II (EVEN SEMESTER 2023-2024)

Time: 90 Minutes **Max. Marks:50**

Q. No	Answer all questions	Marks	Level	CO
1.a	Write a Java Program to check whether the given String is palindrome or not using CharAt () function.	7	2	2
1.b	Explain String Concatenation with different data types with an example.	3	1	1
2.a	Write Java Program to demonstrate Constructor Overloading by creating class Box with properties of Width, Height, Depth and methods to compute and display the volume.	7	3	2
2.b	List and explain the access modifiers used in Java.	3	1	1
3.a	Define Inheritance and Explain different types of Inheritance.	7	2	2
3.b	Define the static keyword. List the restrictions associated with usage of static in Java.	3	1	1
4	Write a Java Program to a) Create a Super class called Bicycle with three methods apply brake (), Speedup () and tostring (). b) Create a sub class called Mountain_Bike () and inherit the methods from the base class. c) Illustrate the Method overriding on tostring() method.	10	3	2
5	Create an Animal class, with attributes name and age. Create classes Dog2, Cat2, Fish2 and Bird2 to inherit from the Animal class create method and display details for each class. Create PetOwner2 class to test the inheritance and polymorphism.	10	3	2

Marks Distribution	Particulars		CO1	CO2	CO3	CO4	L1	L2	L3	L4	L5	L6
	Test	Max Marks	17	43			13	30	17			

BT-Blooms Taxonomy, CO-Course Outcomes, M-Marks

Course Outcomes: After completing the course, the students will be able to:-	
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Department of Computer Science and Engineering

Course with code:(CS115BIC/CS125BIC)–BASICS OF JAVA PROGRAMMING
Semester – II
CIE-III (EVEN SEMESTER 2023-2024)

Time: 110 Minutes **Max. Marks:50+10**

Q.No	Part-A	Marks	Level	CO
1	Does importing a package make sub-packages class files available to the application?	1	1	1

2	Mention the output of the following Java code
	import static java.lang.System.*;
	class StaticImportDemo{
	public static void main(String args[]){
	System.out.println("RV College of Engineering"); } }
		1	1	1

3	Mention the output of the following Java code
	class exception handling {
	public static void main(String args[]){
	try
	system.out.print ("Hello" + " " + 1 / 0);}
	catch (Arithmetic Exception) {
	System.out.print ("World")}}}
		2	2	2

4	Difference between exception and error in Java	2	2	1
5	Justify can we just use try instead of finally and catch blocks.	2	2	2
6	What is the difference between thread and process. What are the wait() and sleep() methods?	2	2	2
Q. No	**Answer all questions**	**Marks**	**Level**	**CO**
1a	Discuss the need of exception handling in Java.	3	2	1
1b	What is Package? Explain in detail how to define your own package with an example	10	2	1
2	Discuss the difference between NoclassDefFoundError and ClassNotfFoundException in Java? Discuss the use of throw keyword	7	2	1
3	Write a JAVA program to create five threads with different priorities. Send three threads of the highest priority to sleep state. Check the aliveness of the threads and mark which is long lasting.	10	3	1
4 a	Define Java thread and discuss the two ways of implementing thread in Java.	7	2	1
4 b	Define Runtime Exception.Describe it with the help of an example.	3	2	2
5	What are Thread Priorities? What are the two ways of implementing thread in Java using examples.	10	2	2

CS113BIC / CS123BIC / 22PL23C

USN | 1 | R | V | 2 | 3 | E | C | 0 | 3 | 0 |

RV COLLEGE OF ENGINEERING®

(An Autonomous Institution Affiliated to VTU)

I/II Semester B. E. Regular / Supplementary Examinations Aug-2024

BASICS OF JAVA PROGRAMMING

Time: 03 Hours *Maximum Marks: 100*

Instructions to candidates:

1. Answer all questions from Part A. Part A questions should be answered in first three pages of the answer book only.
2. Answer FIVE full questions from Part B. In Part B question number 2 & 11 are compulsory. Answer any one full question from 3 and 4, 5 and 6, 7 and 8, 9 and 10, and 11 lab components (compulsory).

PART-A

			M	BT	CO
1	1.1	List the four integer types in Java.	01	1	1

	1.2	Mention the output of the following:
		class OpEquals
		{
		*public static void main(string **avgs** [ ])*
		{
		int a = 1;
		int b = 2;
		int c = 3;
		a+= 5;
		*b *= 4;*
		*c+= a * b;*
		c% = 6;
		system.out.println("a = " + a);
		system.out.println("b = " + b);
		system.out.println("c = " + c);
		}
		}
			02	2	1

	1.3	Write the output of the following Java code:
		class comma
		{
		*public static void main(string **avgs** [ ])*
		{
		int a, b;
		for(a = 1, b = 4; a < b; a++, b--)
		{
		system.out.println("a = " + a);
		system.out.println("b = " + b);
		}
		}
		}
			02	2	2

	1.4	Write the general form of a Java method.	01	1	2
	1.5	Define method overriding.	01	1	3
	1.6	_____ are designed to support dynamic method resolution at run time.	01	1	3
	1.7	Distinguish between process-based and thread-based multitasking environments.	02	2	3

PART-B

2	a	List and explain the main features of object-oriented programming.	07	1	1
	b	Briefly explain the following terms in Java: i) Bitwise operators ii) The For-each version of the for loop iii) Jump statements	07	1	1
3	a	Define constructor. Why constructors are used in Java? Give a suitable real time example using constructors.	06	1	2
	b	Create a class called student with the data members for storing student's register number, name, year and methods for accessing them. Write a driver class with main() method which creates objects of student class and takes user inputs. The program should display the contents of the objects using public method called display() defined in student class.	08	2	21
		OR			
4	a	Given that an employee class contains following members: Employee number, Employee name, Basic DA, IT and Net Salary. Design a Java Program to read the data of N employee and compute Net Salary of an employee (DA= 42% of Basic and Income Tax (IT) = 20% of the gross salary, where gross salary = Basic + DA, Net Salary = gross salary-IT).	08	2	2
	b	Describe the method overloading concept in Java with suitable example program.	06	2	2
5	a	Design a Java Program to: i) Create a super class called Animal with three methods eat(), bark() and weep(). ii) Create a Sub classes like Dog and Baby dog, and illustrate how multilevel inheritance works.	07	3	2
	b	Compare and contrast method overloading and method overriding.	07	2	2
		OR			
6	a	Discuss the usage of final with Inheritance in Java using suitable code snippets.	06	2	3
	b	Design a Java program to create an abstract class called SHAPE to represent any shape in general. Create three derived classes – CIRCLE, RECTANGLE, and SQUARE by inheriting the features of class SHAPE. Implement the methods to read and compute the area. Add method to display the results as required. Assume appropriate attributes.	08	3	4
7	a	What is meant by package? Create a user defined package to find all roots of quadratic equation. Write a Java Program to use this package.	10	2	3
	b	Briefly explain Exception handling mechanism in Java.	04	2	3
		OR			
8	a	With syntax, explain the purpose of interfaces in Java. Illustrate with suitable example.	07	2	3
	b	Why exception handling is required? Implement a stack class and raise user defined exceptions for stack underflow and stack overflow operations.	07	3	4

9	a	Describe thread life cycle with a neat diagram.	07	2	3
	b	Design a Java program that creates two threads object or thread class, where one thread asks the user to enter address along with pin code. Second thread to check pin code is not less than 6 digits and displays the same.	07	3	3
		OR			
10	a	What are Thread Priorities? Demonstrate setPriority() and getPriority() with an example.	07	2	3
	b	Create two threads "FirstThread" and "SecondThread". Both of these threads will display numbers 1,2,3,....10. With a one second delay in displaying the next number. Thread Demo class will be starting these threads "FirstThread" and "SecondThread".	07	3	3
		LAB COMPONENT			
11	a	Create a class called Account. Write a Java Program to deposit and withdraw money in a bank account. The program should display the balance after each operation. Maintain Rs. 1000 as minimum balance. Assume appropriate attributes and use constructors.	10	2	4
	b	Write a Java Program to compute factorial of a given number. Apply a custom exception handling mechanism when a user entered number is a "negative number". Use appropriate classes, methods and handle the exception.	10	3	4