RV College of Engineering®
Mysore Road, RV Vidyaniketan P
Bengaluru - 560059, Karnat

# R V College of Engineering
## Department of Computer Science and Engineering
## CIE 1: Question Paper

| | | | |
|---|---|---|---|
| **Subject: (Code)** | **BASICS TO JAVA PROGRAMMING (22PL15C)** | | **Semester: 1st BE** |
| **Date:** | **Duration: 90 minutes** | **Staff: SDV/AUC/MS** | |
| **Name:** | **USN:** | **Section:** | **A/B/C** |

| Q. No | Answer all questions | Marks | Level | CO |
|---|---|---|---|---|
| 1a | List the primitive data types used in the Java programming language and explain each data type indicating the range and syntax for declaration. | 6 | 1 | 1 |
| 1b | Write a Java Program to find the area of Circle. | 4 | 3 | 2 |
| 2a | Write a Java program to calculate the distance travelled by light in 1000 days. Assume speed of light = 186000. | 7 | 3 | 2 |
| 2b | Define object. Write a syntax for declaring an object. | 3 | 2 | 2 |
| 3.a | Explain the object-oriented concepts in detail. | 6 | 1 | 1 |
| 3.b | Write a Java Program to find an average of an array nums [] = {10.1,11.2,12.3,13.4,14.5} | 4 | 2 | 2 |
| 4 a | Write a Java program to check which season a given particular month is in using if-else-if ladder. | 6 | 3 | 1 |
| 4 b | List the differences between while () and do-while () loop using an example | 4 | 2 | 2 |
| 5 a | Explain class and class members in Java | 3 | 1 | 2 |
| 5 b | Write a Java program to find a volume of two boxes mybox1 and mybox2 using two classes called Box and Box_demo. Class Box should include a variable and a method for calculating a volume and Box_demo should have a main () method. | 7 | 3 | 2 |

| Marks Distribution | Particulars | | CO1 | CO2 | CO3 | CO4 | L1 | L2 | L3 | L4 | L5 | L6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Test | Max Marks | 17 | 33 | | | 14 | 12 | 24 | | | |

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

| | R V College of Engineering<br>Department of Computer Science and Engineering<br>CIE 1: Question Paper | | |
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| Subject: (Code) | BASICS TO JAVA PROGRAMMING (22PL15C) | Semester: 1st BE | |
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| Q. No | Answer all questions | Marks | Level | CO |
|---|---|---|---|---|
| 1a | 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 | 2 | 2 |
| 1b | Explain the access modifiers used in Java. | 3 | 1 | 1 |
| 2a | Define Recursion. Illustrate the Recursion with Java code to find the factorial of the given number. | 6 | 2 | 2 |
| 2b | List and explain the different types of Inheritance used in Java. | 4 | 1 | 2 |
| 3.a | Define Package in Java. Write an example code for creating a Java Package and import Java package. | 7 | 1 | 2 |
| 3.b | Explain the importance of Super keyword in Inheritance with an example. | 3 | 2 | 2 |
| 4 | Write a Java Program to<br>a) Create a Super class called Bicycle with three methods apply brake (), Speedup () and tostring ().<br>b) Create a sub class called Mountain Bike () and inherit the methods from the base class.<br>Illustrate the Method overriding on tostring() method. | 10 | 3 | 3 |
| 5 | Create an Animal class, with attributes name and age. Create classes Dog2, Cat2, Fish2 and Bird2 to inherit from the Animal class. Create PetOwner2 class to test the inheritance and polymorphism. | 10 | 3 | 3 |

| Marks Distribution | Particulars | | CO1 | CO2 | CO3 | CO4 | L1 | L2 | L3 | L4 | L5 | L6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Test | Max Marks | 3 | 27 | 20 | | 14 | 16 | 20 | | | |

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

| Course Outcomes: After completing the course, the students will be able to:- | |
|---|---|
| CO 1 | Explore the fundamentals of Object-oriented concepts and apply features of object-oriented programming of Java to solve real world problems. |
| CO 2 | Design Classes and establish relationship among Classes for various applications from problem definition. |
| CO 3 | Analyze and implement reliable object-oriented applications using Java features such as Exception Handling, Multithreaded Programming, Collection framework and Strings, |
| CO 4 | Design and develop real world applications using Object Oriented concepts and Java programming |

RV College of Engineering

Autonomous Institution Affiliated to Visvesvaraya Technological University, Belagavi

Approved by AICTE, New Delhi

ME-102

*Go, change the world*

Academic year 2023-2024 (Odd Sem)

## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

### Basics To Java Programming

| | | | |
|---|---|---|---|
| Date | JAN 2024 | Maximum Marks | 50 |
| Course Code | 22PL15C | Duration | 90 Min |
| Sem | I | IMPROVEMENT TEST | |
| | | Staff:SDV/MS/AUC | |

| SL No. | Test Questions | M | BT | CO |
|---|---|---|---|---|
| 1. | (a) With an example code snippet, explain Exception Handling and five keywords that are used to manage Exception handling in Java programming Language. | 05 | 2 | 1 |
| | (b)With an example code snippet, explain packages, types of packages and its advantages in Java programming Language. | 05 | 2 | 2 |
| 2. | (a)(i) With an example code snippet, explain Interface in Java programming Language. | 05 | 2 | 3 |
| | (ii)Write a Java program to create an interface Shape with the getArea() method. Create three classes Rectangle, Circle, and Triangle that implement the Shape interface. Implement the getArea() method for each of the three classes. | | | |
| | (b) Write a Java program to create a class known as "BankAccount" with methods called deposit () and withdraw (). Create a subclass called SavingsAccount that overrides the withdraw () method to prevent withdrawals if the account balance falls below one hundred. | 05 | 3 | 4 |
| 3. | (a)With a neat diagram, explain the states in thread life cycle in Java programming Language. | 05 | 2 | 1 |
| | (b)Write a Java program to create and start multiple threads that display different message. | 05 | 2 | 3 |
| 4. | (a)With an example code snippet, Define the two ways to implement thread in Java programming Language. | 05 | 2 | 2 |
| | (b)With sample code snippet, Explain thread priority in Java programming Language? | 05 | 1 | 1 |
| 5. | (a)List various Thread Methods in Java programming Language. | 05 | 1 | 1 |
| | (b)Write a Java program to create a class called Vehicle with a method called drive(). Create a subclass called Car that overrides the drive() method to print "Repairing a car". | 05 | 3 | 4 |

| | |
|---|---|
| CO1 | Explore the fundamentals of Object-oriented concepts and apply features of object-oriented programming of Java to solve real world problems. |
| CO2 | Design Classes and establish relationship among Classes for various applications from problem definition. |
| CO3 | Analyze and implement reliable object-oriented applications using Java features such as Exception Handling, Multithreaded Programming, Collection framework and Strings. |
| CO4 | Design and develop real world applications using Object Oriented concepts and Java programming |

USN | 1 | R | V | 2 | 3 | C | D | 0 | 3 | 7 |

# RV COLLEGE OF ENGINEERING®

**(An Autonomous Institution affiliated to VTU)**

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

**Common to all programs**

## BASICS OF JAVA PROGRAMMING (ELECTIVE)

***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 SIX full questions from Part B. In Part B question numbers 2 and 11 are compulsory. Answer any one full question from 3 and 4, 5 and 6, 7 and 8 & 9 and 10.

### PART-A

| | | | |
|---|---|---|---|
| 1 | 1.1 | The process of defining a method in a subclass having same name and type signature as a method in its superclass is called as _____. | 01 |
| | 1.2 | Mention the output of the following Java code:<br>*class int*<br>{<br>*public static void main(String args* [])<br>{<br>*int a = 4;*<br>*System.out.print(++a * 8);*<br>}<br>} | 01 |
| | 1.3 | Write two uses of 'this' keyword. | 02 |
| | 1.4 | _____ is a superclass of every class in Java. | 01 |
| | 1.5 | List two ways of creating threads in Java. | 02 |
| | 1.6 | _____ keyword is used for the block to be examined of exceptions. | 01 |
| | 1.7 | Which method of class string is used to obtain a length of string object? | 01 |
| | 1.8 | _____ is a mechanism for naming a visibility control of a class and its content. | 01 |

### PART-B

| | | | |
|---|---|---|---|
| 2 | a | Explain Encapsulation and abstraction in Java. | 06 |
| | b | How $1-D$ and $2-D$ arrays are declared and initialized in Java? Explain with suitable examples. | 08 |
| | | | |
| 3 | a | Explain class with an example program to declare and create an object of the class declared which contain few data members and member functions. | 07 |
| | b | What is method overloading? Explain with a program to demonstrate it. | 07 |
| | | **OR** | |

| | | | |
|---|---|---|---|
| 4 | a | Explain the following in Java:<br>i) Constructor<br>ii) Finalize method. | 07 |
| | b | Demonstrate the use of break and continue statement in Java. | 07 |
| | | | |
| 5 | a | Explain abstract class and abstract method in Java. | 06 |
| | b | What are the uses of final keyword in Java? Demonstrate each use with an example program. | 08 |
| | | **OR** | |
| 6 | a | Explain all the uses of super keyword in Java with example program. | 06 |
| | b | With an example program demonstrate the use of inheritance and how the constructors are called in inheritance. | 08 |
| | | | |
| 7 | a | Define package. Explain how to create and import packages in java with an example. | 07 |
| | b | With the help of Java code snippet explain interfaces in Java. | 07 |
| | | **OR** | |
| 8 | a | Develop Java program and explain how to handle multiple catch blocks for a nested try block. | 07 |
| | b | How packages are different from interfaces? Explain with an example. | 07 |
| | | | |
| 9 | a | What is multithreading? In how many ways Java Implements multithreading? Explain one of these ways with suitable example. | 07 |
| | b | Explain with example, suspending and resuming threads in java. | 07 |
| | | **OR** | |
| 10 | a | Explain the concept of thread priorities with the help of Java code snippet. | 07 |
| | b | With a neat sketch, Explain the life cycle of a thread in Java. | 07 |
| | | **LAB COMPONENT** | |
| 11 | a | Develop a Java program top create a string object and to show the working of following methods by writing syntax, explanation and example.<br>i) chatAt()<br>ii) concat()<br>iii) equals()<br>iv) indexOf()<br>v) replace() | 10 |
| | b | Develop a Java program to create a class for complex number which contain default constructor, constructor with arguments, methods to perform addition, subtraction. Demonstrate the working of complex number class by creating required number of objects. | 10 |