# PLC143

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RAMAIAH
Institute of Technology

(Autonomous Institute, Affiliated to VTU)
(Approved by AICTE, New Delhi & Govt. of Karnataka)
Accredited by NBA & NAAC with 'A+' Grade

## SEMESTER END EXAMINATIONS – MAY 2023

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|---|---|---|---|---|---|
| **Program** | : | **B.E :- Common to CSE / ISE / CSE(CY) / AI & DS / BT / AI & ML / CSE (AI&ML) / CV** | **Semester** | : | **I** |
| **Course Name** | : | **Basics of JAVA Programming** | **Max. Marks** | : | **100** |
| **Course Code** | : | **PLC143** | **Duration** | : | **3 Hrs** |

**Instructions to the Candidates:**

- Answer one full question from each unit.

### UNIT - I

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| 1. | a) | List the different types of data types and give an example for each data type. | CO1 | (10) |
| | b) | Develop a Java program to find the largest and smallest element in an array. | CO1 | (10) |
| 2. | a) | Develop a java program to demonstrate the arithmetic operators and relation operators. | CO1 | (10) |
| | b) | Define an Array and strings. Write syntax to create and initialize one and two dimensional arrays, give examples for each. | CO1 | (10) |

### UNIT - II

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| 3. | a) | List bitwise & logical operators. Give one example for each. | CO2 | (10) |
| | b) | Write a Java program to find sum and average of given elements of an array, int arr={3,5,6,-3,7} using *for each* loop. | CO2 | (10) |
| 4. | a) | Develop a java code to find the Fibonacci series, using the while & for loop. | CO2 | (10) |
| | b) | Develop a java code to find the largest of 3 numbers using nested if and ternary operator. | CO2 | (10) |

### UNIT - III

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| 5. | a) | What is constructor? Can you overload constructors, write complete java program to demonstrate the same. | CO3 | (08) |
| | b) | Define class and object. Write a Java program to demonstrate the creation of class and object. | CO3 | (06) |
| | c) | Discuss how to hide instance variables of a class. | CO3 | (06) |
| 6. | a) | Explain and write a java program to demonstrate method overloading. | CO3 | (08) |
| | b) | Write a java program to add two complex numbers. | CO3 | (06) |
| | c) | Write a note on static and final, Give example for each. | CO3 | (06) |

### UNIT- IV

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| 7. | a) | What is inheritance and explain the different types of inheritance with an example. | CO4 | (10) |
| | b) | Explain the use of super keyword with an example in java. | CO4 | (06) |
| | c) | Write a Java program to demonstrate the use of final keyword. | CO4 | (04) |

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|---|---|---|---|---|
| 8. | a) | Define and write a java code for method overriding. | CO4 | (10) |
| | b) | What is an abstract class? Write a Java program to illustrate an use of abstract class. | CO4 | (10) |

**UNIT - V**

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| 9. | a) | What are packages and explain the different access specifiers supported in java with respect to package with an example. | CO5 | (10) |
| | b) | Can Java support multiple inheritance? Justify with an example. | CO5 | (10) |
| 10. | a) | Define an interface called polygon with a method called area. Implement this interface to create different classes like square, rectangle and print the area of square and rectangle. | CO5 | (08) |
| | b) | Explain and write a syntax for try and catch to handle multiple exceptions. | CO5 | (06) |
| | c) | Discuss throw and throws with an example. | CO5 | (06) |

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