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|  **ST. JOSEPH’S UNIVERSITY, BANGALORE-27** |
| **BSc–III SEMESTER** |
| **SEMESTER EXAMINATION: OCTOBER 2023****(Examination conducted in November /December 2023)** |
| **CS322- Object Oriented Programming Concepts and Programming in JAVA** **(For current batch students only)** |
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| **Time- 2 hrs** |  | **Max Marks-60** |
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| **This paper contains two printed pages and three parts****PART A****Answer All the Questions. 2\*5=10**1. Compare Procedure oriented and Object Oriented Programming.
2. Is Java a strongly typed language? Justify your answer.
3. Mention any two file stream classes along with their functionalities.
4. Relate final and finally keyword function in java programming.
5. What is Event Listener?

 **PART B****Answer any FIVE. 4\*5=20**1. Develop a Java program for the following using command line arguments:

( each carries 2 marks)a) To find factorial of a given number b) count the number of digits of a given number. 1. Design a Java program to display “St. Joseph’s University” message to the user when a button named ‘Hello’ is clicked.
2. Print the sum, difference and product of two complex numbers by creating a class named 'Complex' with separate methods for each operation whose real and imaginary parts are entered by user.
3. Describe various AWT containers with examples.
4. Implement with an programming example, how arrays are defined and initialized.
5. Interpret with an example, how can we make use of abstract class and concrete methods in a Java Program.
6. Distinguish between ‘throw’ and ‘throws’ with programming example.

 **PART C****Answer any THREE. 10\*3=30**1. a) With suitable program snippet describe the usage of ‘super’ keyword. (5 marks)

 b) Construct a Java Program to create a super class to define course and create two  subclasses (show departments and teacher’s details) and try to implement the  concept of multilevel inheritance. (5 marks)1. a) Describe synchronization and write two points why is it important? (5 marks)

b) Develop a Java program to implement bubble sort for 5 integers. (5 marks)1. a) Demonstrate multithreading and explain thread life cycle. (5 marks)

b) Construct a simple program to create a package and import the package to make use of a class declared in the package. (5 marks)1. a) Discuss user-defined exception handling with a programming example. (5 marks)

b) Design an interface called **Shape** with methods **draw()** and **getArea()**. Further design two classes called **Circle** and **Rectangle** that implements **Shape** to compute area of respective shapes. Use appropriate **getter** and **setter** methods. Write a java program for the same. (5 marks) |
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