**ST JOSEPH’S UNIVERSITY, BENGALURU -27**

Registration Number:

Date & Session

**BCA – 2nd SEMESTER**

**SEMESTER EXAMINATION: April 2024**

**(Examination conducted in May / June 2024)**

**CA2221 – Object Oriented Concepts Using Java**

**(For current batch students only)**

**Time: 2 Hours Max Marks: 60**

**This paper contains \_\_\_2\_\_\_ printed pages and \_\_3\_\_\_ parts**

**PART-A**

**Answer all the following questions. 2x5=10**

1. What is polymorphism? What are the types of polymorphism present in Java.
2. Write a program to swap two numbers using XOR operator.
3. How package is useful in Java programming?
4. Mention any two built in exceptions.
5. What is Java bean?

**PART – B**

 **Answer any FIVE of the following questions. 4x5=20**

1. What is an interface? How does it differ from a class, and what are its advantages?
2. Illustrate the string buffer class with a suitable program.
3. Explain in detail the visibility modifier.
4. What is Exception handling? Create a program that reads input from a user and performs a mathematical operation. Use try-catch-finally blocks to handle any exceptions that may occur, such as divide by zero or invalid input.
5. Develop a program that changes the color of a button when it is clicked. Use event handling to detect the button click and change the button's color dynamically.
6. Develop an Employee class with name, empid and dateofjoining. Include constructor to initialize the instance variables. Create employee objects and sort them based on name in alphabetical order.
7. Write the purpose of Generic Method, illustrate the same with suitable program.

**PART – C**

 **Answer any THREE of the following questions. 3x10=30**

1. A. Differentiate method overloading and method overriding. (4)
2. Explain the difference between wait() and sleep() methods in Java. How are they used in the context of thread synchronization and timing control? Provide an example to illustrate their usage.
3. A. Create a program that reads a text file containing student names and their grades, calculates the average grade, and writes the results to a new text file. (5)

B. How to implement matrix multiplication? Illustrate the same with programming example. (5)

1. A. Describe following string class method with syntax:

compareTo( )

equalsIgnoreCase( ). (4)

B. Write a Java program that utilizes the AWT package to design and implement a login page. (6)