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GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY, ODISHA, GUNUPUR (GIET UNIVERSITY)



B. Tech (Third Semester - Regular) Examinations, November – 2024
23BCSPC23002 – Object Oriented Programming through JAVA
(CSE, CSE(AIML), CSE(DS))

Time: 3 hrs

Maximum: 60 Marks

Answer ALL questions

PART – A

(2 x 5 = 10 Marks)

Q.1. Answer **ALL** questions

- a. Identify the role of JVM.
- b. How do java supports polymorphism?
- c. Define serialization. How can it be achieved in java?
- d. Draw the lifecycle of an applet.
- e. Write a swing code to create the following JRadioButton

CO #	Blooms Level
CO1	K1
CO2	K2
CO3	K2
CO4	K2
CO5	K3



PART – B

(10 x 5 = 50 Marks)

Answer **ALL** the questions

2. a. Write a JAVA code to reverse a given four digit number.
- b. Compare Scanner class and BufferedReader class in java.

Marks	CO #	Blooms Level
6	CO2	K3
4	CO1	K2

(OR)

- c. Write a JAVA code to perform sorting of an array of strings in alphabetical order.
- d. Illustrate the use of jumping statements in java.
- 3.a. Create a JAVA class “Book” with member title, author, and ISBN. Create an array of Book objects to store the books in the library. Populate the array with a few books. Implement a search functionality to find a book by its ISBN. If the book is found, it should print the title of the book.

6	CO2	K3
4	CO1	K2
10	CO2	K3

(OR)

- b. You are designing a system to manage different types of vehicles in a parking lot. The system should be able to handle cars, motorcycles, and buses. Each vehicle has a unique ID, a license plate number, and a parking fee calculation method. How would you use interfaces to model this system?

10	CO5	K3
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- 4.a. Alex is developing a program to manage and validate student roll numbers and their associated scores. The program accepts an array size, populates it with scores, and then doubles the score at the specified index. Create user defined exceptions for the following and Write a JAVA code to handle these exceptions.
1.Validate Roll Number: The roll number must be within the range of the array size (0 to array size - 1). If the roll number is out of this range, it throws an `ArrayIndexOutOfBoundsException` with: "Roll number exceeds array size or is negative" message.

10	CO5	K3
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2.Handle Invalid Inputs: If the input is not an integer where an integer is expected, it catches the exception with: "Invalid input format: For input string: \"{input}\"" message.

(OR)

b. What is inter thread communication? Write a java code that illustrates the inter thread communication. 10 CO4 K3

5.a. Explain the collections: List and Set in detail with examples. 10 CO4 K2

(OR)

b. Write a java program to handle mouse and keyboard events. 10 CO3 K3

6.a. Write the steps involved in connecting using JDBC. 5 CO3 K2

b. How will you perform CRUD operations in JDBC? 5 CO3 K3

(OR)

c. Elaborate on the hierarchy of swing components. 5 CO6 K2

d. Elaborate the role of driver manager in JAVA. 5 CO6 K2

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