SVKM'S NMIMS

MUKESH PATEL SCHOOL OF TECHNOLOGY MANAGEMENT& ENGINEERING

Academic Year: 2023-2024

Program: MCA | Year: I | Semester: I

Stream: Computer Engineering

Subject: Java Programming | Time: 3 hrs (10 am to 1 pm)

Date: 24 /11 / 2023 | No. of Pages: 02

Marks: 100

Final Examination (2023-24) / Re-Exam (2022-23)

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover of the Answer Book, which is provided for their use.

1) Question No. 1 is compulsory.
2) Out of remaining questions, attempt any 4 questions.
3) **In all 5 questions to be attempted.**
4) All questions carry equal marks.
5) **Answer to each new question to be started on a fresh page.**
6) **Figures in brackets on the right hand side indicate full marks.**
7) **Assume Suitable data if necessary.**
8) **Write output for all programming questions.**

Q1		**Answer briefly:**	**[20]**
CO-1 ; BL-2	a.	Discuss the following Object Oriented Programming terminologies in detail. a. Abstraction b. Encapsulation c. Polymorphism d. Inheritance e. Objects	[5]
CO-3 ; BL-4	b.	Elaborate any five features of JavaFX.	[5]
CO-1 BL-6	c.	Develop a Java Program to perform following String operations. Take two string inputs from the user. Eg: string 1: Java and HTML Programming and String 2: HTML. Perform the following string operations on it. 1. Concatenation of string 1 and string 2. 2. Determine if string 2 occurs in string 1. If string 2 occurs in string 1, then extract string 2 from string 1. 3. Replace string 2 by "Java" in string 1. 4. Compare string 1 and string 2 using the method that returns integer value after comparing. 5. Convert string1 to UpperCase	[5]
CO-2 ; BL-2	d.	Explain Arraylist in detail. Also Mention the methods of Iterator Interface.	[5]

Q2 CO-1; BL-4,6	a.	Explain difference between Method Overloading and Method Overriding. Write a Java Program to demonstrate Method Overloading by overloading the methods for calculating Area of circle, rectangle and triangle.	[10]
CO-1; BL-6	b.	Write a program to calculate the total number of characters in the String excluding blank spaces. The string should be taken input from the user. Eg: input string: Hello World No. of characters : 10	[10]
Q3 CO-1; BL-2	a.	Explain "throw" keyword in java with the help of a program.	[10]
CO-1; BL-6	b.	Develop a Java Program to create a class faculty with faculty id and faculty name as data members. Derive a class full time faculty from faculty class. Full time faculty will have qualification and number of research papers published as data members. Derive a class visiting faculty from faculty class with data members number of hours lecture conducted. The visiting faculty earns 1000 Rs per hour. Write a method to calculate salary of visiting faculty. Write a main method to create objects and to display appropriate details of full time and visiting faculty. Use appropriate constructors.	[10]
Q4 CO-1; BL-2,6	a.	1. Implement a Java Program to find largest of three numbers accepted from the user using BufferedReader Class. 2. Explain Compile time and Runtime Exceptions in detail.	[10]
CO-3; BL-4	b.	Elaborate on Event Handling and Phases of Event Handling in Java FX with types of events.	[10]
Q5 CO-3; BL-2	a.	Explain JDBC Architecture and types of JDBC Drivers.	[10]
CO-2; BL-2	b.	Explain the following with respect to Generics – 1. Generic Methods and their rules 2. Generic Restrictions 3. Bounded Types with example code	[10]
Q6 CO-1; BL-6	a.	Write Java Codes to create a package and import it in another program. Call the method in the package from the program in which it is imported. Also specify the steps to get the output.	[10]
CO-3; BL-2	b.	Explain Java FX Application structure and Lifecycle of a Java FX Application in detail.	[10]
Q7 CO-1; BL-2,4	a.	1. Explain Access Modifiers in Java 2. Differentiate between Interface and Abstract Class.	[10]
CO-2; BL-2	b.	Explain Collection Framework with a neat diagram. Explain any five methods of TreeSet Collection in detail.	[10]