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RV COLLEGE OF ENGINEERING®
 (An Autonomous Institution affiliated to VTU)
 IV Semester B. E. Fast Track Examinations July-19

Computer Science and Engineering
OBJECT ORIENTED PROGRAMMING USING JAVA

*Time: 03 Hours**Maximum Marks: 100**Instructions to candidates:*

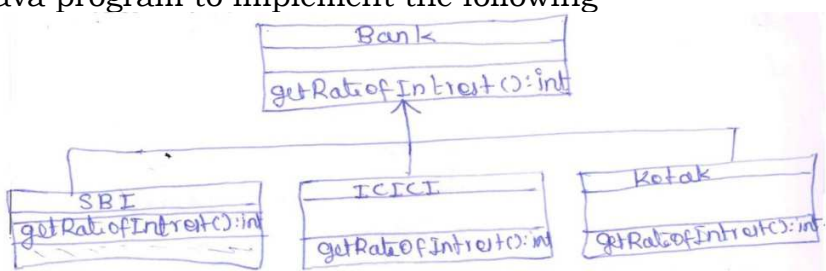
1. Answer all questions from Part A. Part A questions should be answered in first three pages of the answer book only.
2. Answer FIVE full questions from Part B. In Part B question number 2, 7 and 8 are compulsory. Answer any one full question from 3 and 4 & one full question from 5 and 6

PART A

1	1.1	Mention all roles that are played by an object as a participant in a link, in object oriented analysis and design model.	02
	1.2	List out all metrics to determine whether the given class or object is well defined or not in object oriented analysis and design model	02
	1.3	What will be the output of following program? <pre>class airline { int id; String airlinename; void display() { System.out.println(id + " " + airlinename); } public static void main (string args[]) { airline a1 = new airline(); airline a2 = new airline(); a1.display(); a2.display(); } }</pre>	02
	1.4	What is the output of following program? <pre>class demo { int a = 40; public static void main(string args[]) { System.out.println (a); } }</pre>	01
	1.5	Write a code snippet to get previous and next index while traversing through elements of ArrayList using ListIterator.	02
	1.6	Can a constructor be synchronized? Justify.	01

1.7	$(float\ x,y) \rightarrow x - y$ Is this a valid lambda expression?	01
1.8	What is the difference between statement and preparedstatement interface in Java?	01
1.9	List the life cycle methods for JSP.	02
1.10	_____ action tag is used to locate or instantiate a Java bean class.	01
1.11	Give an example for checked Exception and unchecked Exception	02
1.12	Which stream class in Java is used to read data from multiple streams?	01
1.13	Write down the 3 constants defined for thread priority in thread class.	02

PART B

2	a	List and explain the various elements of an object model (major and minor elements of the object model) with an example.	12
	b	Briefly explain about the following: i) Interface ii) Implementation in object oriented analysis and design.	04
3	a	Write a Java program to implement the following  <p>But rate of interest varies according to banks. For example SBI, ICICI and Kotak banks could provide 8%, 7% and 9% rate of interest.</p>	08
	b	Explain Java access modifiers with an example.	08
		OR	
4	a	Write a Java program to create custom Exception to demonstrate the following i) Get age as input from the user ii) Check whether the given input is less than 18, throw an user defined Exception called "Invalid Age Exception" created by user.	08
	b	Write a Java program to invoke parent class constructor.	04
	c	Differentiate between abstract class and interface with an example.	04
5	a	Develop a Java program that should ensure all threads that started from main must end in order in which they started and also main should be in last.	06
	b	mention the difference between ArrayList and LinkedList	04
	c	Briefly explain about Java method reference in Java	06
		OR	
6	a	Explain with an example "what is race condition in Java multithreading" and how to solve it?	06

	b	Develop a Java program to perform the following operations: i) Extract a portion of a list ii) Copy one list into another iii) Reversing elements in a list.	04
	c	Develop a Java program to implement the following using Lambda expression for a functional interface: i) Factorial of a given number ii) Check whether a given number is prime or not.	06
7	a	Write a Java program to read password using Java console class.	04
	b	Write a Java program to demonstrate the following: i) Check whether a file exists or not ii) Delete a file iii) Display the size of a file.	04
	c	Mention the important features of JavaFx.	08
8	a	With the help of code snippet, explain the various steps involved to connect any Java applications with the database in Java using <i>JDBC</i> .	06
	b	Explain in detail about different types of <i>JDBC</i> drivers in Java.	04
	c	Write a <i>JSP</i> program to do the following using jsp scriptlet tag: i) Create a file called index.html to get the username from the user ii) Create a file called welcome.jsp file that are used to print the username with welcome message.	06