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| **VIDYAVARDHAKA COLLEGE OF ENGINEERING**  **Autonomous Institute, Affiliated to Visvesvaraya Technological University, Belagavi**  **Gokulam, 3rd Stage, Mysuru 570 002** | | | | |
| **Third Semester B.E. Examinations** | | | | |
| **COURSE NAME:**  **OBJECT ORIENTED PROGRAMMING** | | | | |
| **Duration: 3 hours Max. Marks: 100** | | | | |
| **INSTRUCTION TO STUDENTS**  **1) Answer One Full question from each module.**  **2) Three module questions are compulsory and remaining two modules will have internal choice.** | | | | |
| **Q. No.** | **Module-I** | **Marks** | **BL** | **CO** |
| **1. (a)** | **Explain the various bitwise operators in Java.** | **8** | **L2** | **CO1** |
| **1. (b)** | **Demonstrate the concept of classes and objects in Java.** | **8** | **L2** | **CO1** |
| **1. ©** | **Explain the working of JVM in Java.** | **4** | **L2** | **C01** |
| **Module-II** | | | | |
| **2.(a)** | **Develop a java program to handle errors occurring when dividing a number by 0 and while accessing index of an array which is out of bound, also print a completion message at the end of program.** | **10** | **L3** | **CO2** |
| **2.(b)** | **For the given Stack interface, complete the code by adding main(), and class which uses this interface and constructor.**  **Interface IntStack{**  **void push(int item);**  **int pop();**  **}** | **10** | **L4** | **CO3** |
| **Module-III** | | | | |
| **3.(a)** | **Develop a program to solve the bounded buffer problem using multithreading concept.** | **10** | **L3** | **CO2** |
| **3.(b)** | **Analyze the below code and complete the program to find the previous and next elements by using an iterator to the collection.**  **…………**  **public static void main(String args[])**  **{**  **ArrayList<String> al = new ArrayList<String>();**  **……………..**  **}** | **10** | **L4** | **CO3** |
| **(OR)** | | | | |
| **4.(a)** | **Develop a program to store 5 integer numbers and to delete the last number using Linkedlist.** | **10** | **L3** | **CO2** |
| **4.(b)** | **For the given code below, complete the program for deadlock of two threads using multithreading.**  **……………**  **Class Deadlock implements Runnable{**  **A a= new A();**  **B b= new B();**  **……………………..**  **}** | **10** | **L4** | **CO3** |
| **Module- IV** | | | | |
| **5.(a)** | **Assume a web browser using GET and POST methods, create a servlet that can handle both the methods.** | **10** | **L3** | **CO2** |
| **5.(b)** | **Design and develop a java program to read and delete an existing cookie.** | **10** | **L5** | **CO4** |
| **(OR)** | | | | |
| **6.(a)** | **By considering the methods available in session object find out the creation time and the last accessed time for a session.** | **10** | **L3** | **CO2** |
| **6.(b)** | **Design and develop a java program to set refresh header by using setIntHeader ().** | **10** | **L5** | **CO4** |
| **Module- V** | | | | |
| **7.(a)** | **By considering a transaction on customer table, give a code that updates any of the rows and also commits the transaction using commit().** | **10** | **L3** | **CO2** |
| **7.(b)** | **Design and develop a Java program that executes insert and delete queries using the prepared statement object.** | **10** | **L5** | **CO4** |