BHARATIVIDYAPEETH'S

INSTITUTEOFCOMPUTERAPPLICATIONS&MANAGEMENT (BVICAM)

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CourseCode: MCA-109   Course Name: Object Oriented Programming and Java

Practice Questions (Theory)

	UNIT– I
Q1.	Differentiate between print() and println() methods?
Q2.	Explain symbolic constants with suitable examples?
Q3.	Through suitable example explain the StringTokenizer class usage?
Q4.	Compare String and StringBuffer instances?
Q5.	Briefly explain the role of bytecode in making Java platform independent?
Q6.	List the significance of the access specifiers in inheritance?
Q7.	Elaborate different parts of a Java program with appropriate example?
Q8.	Explain any five object oriented features supported by java with examples
Q9.	Write a java program that prints all real solutions to the quadratic equation $ax^2 + bx + c = 0$. Read in a, b, c from the user and use the quadratic formula.
Q10.	What is method overloading? Can you define two methods that have same name but different parameter types? Can you define two methods in class that have identical method names and parameter profile with different return values types or different modifier?
Q11.	Write a java program that collects input as a decimal number of integer type and converts it into String of equivalent hexadecimal number.
Q12.	Describe how java supports runtime polymorphism with an example by considering get Interest Rate() of RBI being overridden with get Interest Rate() of various banks like sbi, axis, icici, etc which extend RBI.
Q13.	"Interface variables are static and final by default in Java" - Support this statement with proper explanation. Compare and contrast an Interface and abstract class?
Q14.	Write a java program to create a package named called mypack, containing a class name as Right Triangle having a static method to check whether three given sides of a triangle forms a right-angled triangle and returns that information. Import this package in another class.
Q15.	Write a Java Program to create an abstract class named Shape that contains two integers and an empty method named print Area().provide three classes named Rectangle, Triangle and Circle such that each one of the classes extends the class Shape. Each one of the classes contains only the method print Area () that prints the area of the given shape
Q16.	Demonstrate the behavior of programs involving the basic program ming constructs like control structures, constructors, string handling and garbage collection.
Q17.	Use overloading concept on method and constructor for application programs.

Q18.	Explain the concept of class and objects with access control to represent Understand real world entities?
Q19.	What will be the result of attempting to compile and run the following program? public class MyClass extends Thread { public MyClass(String s) { msg = s; } String msg; public void run() { System.out.println(msg); } public static void main(String[] args) { new MyClass("Hello"); new MyClass("World"); } }
Q20.	You want subclasses in any package to have access to members of a superclass. Which is the most restrictive access modifier that will accomplish this objective? Explain with example
Q21.	What restrictions are placed on the location of a package statement within a source code file?
Q22.	Explain the transient & volatile variable?
Q23.	Explain the concept of default package, & anonymous class
Q24.	Outline the iteration statements in Java with syntax and example.
Q25.	When a class hierarchy is created, in what order are the constructors for the classes that make up the hierarchy called? Outline with an example.
Q26.	Write a Java program to accept `n' names, store it in an array, sort the names in alphabetic order and display the result. Use classes and methods.
Q27.	Write a Java program to accept two square matrices, store them in an array, add the matrices and display the result. Use classes and methods.
Q28.	Exemplify the use of super keyword.
Q29.	Write a Java program to calculate electricity bill using inheritance. The program should get the inputs of watts per hour and unit rate. Check your program for the following case : Assume a consumer consumes 5000 watts per hour daily for one month. Calculate the total energy bill of that consumer if per unit rate is 7 [1 unit = 1k Wh].
Q30.	What are the uses of "this" keyword in java? Explain with the help of an example.
Q31.	Consider a scenario where a class 'Rectangle' with two data members 'Length', 'Breadth' has to be defined and initialized. Sometimes there would be a need that the instance initialization should happen by copying the value from an already initialized instance to the new instance. Model such a class with appropriate constructors and illustrate the working of the class.
Q32.	Differentiate between JDK and JRE?
Q33.	Elaborate usage of the static keyword?
Q34.	Differentiate between Pass by Reference and Pass by Value?
	UNIT II
Q35.	Compare error with an exception?
Q36.	Explain the importance of synchronization with a suitable example?
Q37.	What is an Exception? List out the keywords for exception handing and write steps to develop user defined exception
Q38.	Write a program that creates a user interface to perform integer division. The user enters two numbers through command line arguments as Num1 and Num2, perform division and returns the remainder. If Num1 and Num2 are not integers, then Number Format Exception has to be generated . If Num2 is Zero, Arithmetic Exception has to be generated.

Q39.	What is multithreading? Explain how multithreading in single processor system is different from multi threading in multiprocessor system?
Q40.	Write a java program that creates three threads. First thread displays Synchronization in every two seconds, the second thread displays Multithreading in every three seconds, and the third thread displays Chris Bates every four seconds
Q41.	What is the purpose of the wait(), notify(), and notifyAll() methods?
Q42.	You need to store elements in a collection that guarantees that no duplicates are stored and all elementscan be accessed in natural order. Which interface among the following provides this capability? Also give two examples for the selected interface. a) Java.util.Map. b) Java.util.Set. c) Java.util.List. d) Java.util.StoredSet. e) Java.util.StoredMap. f) Java.util.Collection.
Q43.	When a thread blocks on I/O, what state does it enter?
Q44.	What is use of synchronized keyword & serialization
Q45.	What is mean by multi-threading ? What are the 2 ways of creating a thread ? Which is the best way and why?
Q46.	What is chained exception?
Q47.	Present an outline of the methods used by Java for interprocess communication?
Q48.	What is the purpose of finally clause ? give example.
Q49.	Write an addressbook class that manages a collection of person object. An addressbook will allow a person to add, delete, or search for a person object in the address book. • Add method : It should add a person object to the addressbook. • Delete method: It should remove the specified person object from the book. • Search method: It searches the address book for a specified person and returns the list of persons matching the specified criteria. The search can be done either by first name, last name or person id
Q50.	Write a client & server programs in Java to show the TCP connection establishment and data transfer.
Q51.	Write a client & server programs in Java using Datagram data transfer.
Q52.	Explain in detail how exception handling mechanism used in Java using 'throw' and 'throws'
Q53.	Define two user defined exception 'EvenNumberException' and 'OddNumberException'. Write a Java class which has a method which checks whether a given number if even or not. The method throws 'EvenNumberException' or 'OddNumberException' if the number is even or odd respectively. Illustrate the handling of the exception with suitable sequence of codes.
Q54.	Create a user defined Exception 'InvalidNumberException'. Write a Java program that computes the average of N positive numbers given as Command Line Arguments. Raise the Exception 'InvalidNumberException' on reading a negative number or zero as input.
Q55.	Elaborate the usage of Iterator through a suitable example?

Q56.	Differentiate between Comparable and Comparator interface?
Q57.	Elaborate the difference between HashSet and TreeSet?
UNIT III	
Q58.	Elaborate the difference between JToggle and Radio button?
Q59.	Discuss the need of an adapter class?
Q60.	Explain why swings are better than AWT and list the methods of JFrame and constructors of JDialog swing components.
Q61.	Write a program that works as a simple calculator. Use a grid layout to arrange buttons for the digits and for the + , - ,*,% operations. Add a text field to display the result. Handle any possible exception like divided by zero.
Q62.	Write a java program that simulates a traffic light. The program lets the user select one of three lights: red, yellow, or green with radio buttons. On selecting a button, an appropriate message with "Stop" or "Ready" or "Go" should appear above the buttons in selected color. Initially there is no message shown.
Q63.	Understand the process of graphical user interface design and impleme ntation using AWT or swing
Q64.	Use different layouts (Flow Layout, Boarder Layout, Grid Layout, and Card Layout) to position the controls for developing graphical graphical user interface.
Q65.	What is AWTEvent class? Name the main event classes in java.awt.event and provide an outline of when they are generated.
Q66.	Demonstrate any four mouse event handlers with example
Q67.	Write a GUI based Java program to check whether a given number. is prime or not. Use appropriate AWT components and event handling.
Q68.	Write a simple GUI Java program which displays only a Window or a Frame. Provide the implementation of the event handling mechanism such that the Window or Frame is closed when the 'Close (X)' symbol on its top is clicked.
Q69.	Define Events in Java. Illustrate the events and the corresponding event listeners for the UI elements such as TextField, Button and Window.
Q70.	State the advantages of using Adapter Classes (WindowAdapter, MouseAdapter …) instead of the listener interfaces (WindowListener, MouseListener …) for event handling in Java.
Q71.	Write Java AWT/Swing based program to display a GUI to accept username and password from user. The GUI should contain the required UI elements and should have appropriate event handling aspects.
Q72.	Compare Scrollbar with a JScrollbar?
Q73.	Elaborate the difference between a Window and Frame?
Q74.	Elaborate the types of Inner classes in Java?
UNIT IV	
Q75.	Describe the significance of the CLASSPATH environment variable in creating/using a package?
Q76.	Elaborate the methods of the Character stream?
Q77.	Explain the purpose of streams. List out the various methods of reader and writer abstract classes.
Q78.	Write a Java program that reads a .txt file from user and display number of words and lines in the file.
Q79.	Elaborate the necessity of drivers and describe the steps involved in establishment of a JDBC connection to retrieve the data from database.

Q80.	Write a java Program that inserts book details like bookid, author, pages, price, in to library database, update the database by adding publisher column and display the result from library database using JDBC connectivity.
Q81.	Describe the backend connectivity process in java program by JDBC drivers.
Q82.	Develop java application to interact with database by using relevant Understand software component (JDBC Driver).
Q83.	Understand the impact of exception handling to avoid abnormal termination of program using checked and unchecked exceptions.
Q84.	What is the purpose of the File class?
Q85.	What is InputStream? Present an outline of the methods defined by InputStream
Q86.	Explain the steps using java code for connecting a Java program to a database using JDBC API.
Q87.	Explain the term RMI in Java. Briefly discuss the steps involved in creation of stub and skeleton.
Q88.	What are byte streams and character streams? Give examples of Java classes for each stream
Q89.	Write a Java program to read characters from the console using BufferedReader class
Q90.	With an example, state the basic differences between the execution of the methods 'executeQuery' and 'executeUpdate'.
Q91.	Write a Java program to store the marks of students corresponding to three subjects in database. The program should provide provision for the following. i. Create a table in database corresponding to a particular class. ii. Find student who topped the class. iii. Find the average class marks for a given subject
Q92.	Write a Java program to create a new file named 'MyFile.txt' and write the statement "This is the University Exam for OOPJ. This a program to illustrate the use of files." into the file with each sentence in the statement representing a new line in the file.
Q93.	Write two subclasses for the 'InputStream' and 'OutputStream' classes in Java and specify its uses.
Q94.	What is the advantage of PreparedStatement over Statement ?
Q95.	What are the layers of RMI Architecture ?
Q96.	Compare marshalling versus unmarshalling?

**************Wish you luck!**************