

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

July 2022 Semester End Make-Up Examinations

Programme: B.E.

Branch: Computer Science And Engineering

Course Code: 19CS3PCOOJ

Course: Object Oriented Java Programming

Semester: III

Duration: 3 hrs.

Max Marks: 100

Date: 04.07.2022

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may suitably assumed.

UNIT - I

- 1 a) Write an interactive Java program that reads elements of a two- dimensional array, add the elements, and displays the result. 09
- b) Analyze the given Java program and determine the output of the following. 07
Justify your answer with appropriate reason.
- ```
class conversion{
 public static void main(String args[])
 {
 byte b;
 int i=258;
 double d=324.142;
 System.out.println("\nConversion of int to byte");
 b=(byte)i;
 System.out.println("i and b"+i+" "+b);
 System.out.println("Conversion of double to int");
 i=(int)d;
 System.out.println("d and I" +d + " "+i);
 System.out.println("\n Conversion of double to byte");
 b=(byte)d;
 System.out.println(" d and b"+d+" "+b);
 }
}
```
- c) With an example, explain the structure of Java program and write the benefits of bytecode. 04

### UNIT - II

- 2 a) Write a Java program to illustrate the implementation dynamic stack class. 08
- b) Create a Java program to demonstrate different types of parameter passing to constructors of a class Box with data members width, height and depth. 08
- c) Write a Java program for multiplication of three numbers given using command line arguments. 04

**Important Note:** Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

### UNIT - III

- 3 a) Create a class Employee (data member ( emp\_no, name and salary), constructor and method to display data). The classes Manager and Scientist inherit from class Employee. class Manager (data member (reward), constructor and method to display data), class scientist (data member (perks), constructor and method to display data). Demonstrate the inheritance and usage of super keyword. 08
- b) With an example program, demonstrate dynamic method dispatch. 08
- c) Consider multilevel type of inheritance with three levels. Demonstrate the order in which constructors of the classes are called that make up the hierarchy executed. 04

### UNIT - IV

- 4 a) Create a package called Maths having a class called Number (add and subtract methods). Implement a simple class called Mathsdemo to use Maths (outside package Maths) that makes use of classes / capabilities provided by Maths. Mention the procedure. 08
- b) Analyze the given Java program, find the errors. Write the corrected program. Underline the places where errors are corrected. 06

```
interface MyInterface {
 void method1();
 void method2();
}

class Demo extends MyInterface {
 void method1() {
 System.out.println("My Method 1");
 }
 void method2() {
 System.out.println("My Method 2");
 }
 public static void Main(String[] args) {
 MyInterface obj = new MyInterface();
 obj.method1();
 }
}
```

- c) Create a user defined exception named Reorder. Create a class called Item with members- Id, name, price, quantity, reorder\_level. Include methods-
- i) purchase - which adds items to the existing quantity and
  - ii) sell - which reduces the same.
- Create two objects of Item and set the values given by the user. Raise the exception Reorder when the quantity of any item goes below reorder\_level.

OR

- 5 a) Create two packages – One named Personal and other named Professional. The Personal package has a class Person with details – name, age, address, emailid. This includes methods to accept and display data from the user. The Professional package has a class Manager which is a subclass of Person with details- Id, Deptid, Qualification, Salary. This includes methods to accept and display data from the user. Import these two packages in a file which creates n objects of the Manager class. Print the names of the Managers who are above 50 years of age and who earn above 50000 10
- b) Write a program in Java that finds average of first n numbers. Implement the avgFirstN(int N) method such that when it is called with an argument that is zero or negative, an IllegalArgumentException is thrown. 05
- c) Demonstrate Generics with an example program. 05

#### UNIT - V

- 6 a) Write a Java program to print the output in the following order only [BMS] [College] [of] [Engineering] using threads. 10
- b) Write a Java program to displays cross hairs (+ symbol) that track the mouse pointer. The cross hairs must be always visible, no matter what the underlying color is. the canvas must display four rectangles with different color 10

OR

- 7 a) How do Java supports inter- thread communication mechanism? Illustrate the same with producer consumer example program generating following output.  
Put: a  
Got: a  
Put: b  
Got: b  
Put: c  
Got: c  
Put: d  
Got: d  
Put: e  
Got: e 10
- b) Write a Java program to display the cursor position when the mouse is moved and mouse dragged. Include closing of a window appropriately. 10

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