

3rd Semester B.Tech Mid-Term Exam 2023-24(Batch 2022)

OOP USING JAVA(BTCS-T-ES-005)

BRANCH(S) - Electronics & Communication Engineering, Computer Engineering, Computer Science and Technology, Computer Science & Engineering, Electrical & Electronics Engineering, Electronics and Instrumentation Engineering

Duration: 01:30

Full Marks: 25

1 Answer All

- a What is the use of a constructor? 1
- b What will be the output of the following code? 1
- ```
class Test{
 void add(int a,char b){
 System.out.println(a+b);
 }
 void add(int a,double b){
 System.out.println(a+b);
 }
}

class DriverMain{
 public static void main(String []args){
 Test obj=new Test();
 obj.add(10,20);
 }
}
```
- c What will be the output of the following code if the command line arguments are provided as : 1
- ```
java Test programming using java  
class Test{  
    public static void main(String args[]){  
        System.out.println(args[1]);  
    }  
}
```
- d An interface contains only which type of methods? 1
- e How data abstraction is achieved in java? 1
- f How method overriding can be prevented in java? 1

2 Answer All

- a Differentiate between a method and a constructor in Java. 3
- b Write a java program to read a number at runtime using Scanner class and find the factorial of the entered number. 3
- c Discuss the use of the 'final' keyword in java. 3

3 Answer any One

- a Write a java program to define a class Student having the data members: rollNo, name, cgpa and a method to display the student details. Define both default and parameterized constructors for initializing the data members of the class. Create another Driver class to test all functionalities. 5
- b What is an object? write short notes on the following 3 major features of object oriented programming: 5
- (i) Abstraction
 - (ii) Polymorphism
 - (iii) Inheritance

4 Answer any One

- a Define an abstract class named as Shape, having data members dimOne and dimTwo. Extend this class to create two concrete classes named as Rectangle and Triangle. Override the computeArea() method in the sub classes. Invoke the computeArea() method in the main method of another Driver class through an abstract class reference variable. 5
- b Write a java program to define a class Customer with data members: customerID, name, and a method to display the customer details. The class should have a parameterized constructor to initialize the data members. Create a child class RegularCustomer that contains data members: mobileNo and prizeAmount. Use 'super' in child class constructor to initialize the data members. Create another Driver class to test the functionalities. 5