

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (OLD) EXAMINATION – SUMMER 2021****Subject Code:150704****Date:15/09/2021****Subject Name:Object Oriented Programming With Java****Time:10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) Describe the following features of java: 1)Multithreaded,2)Architecture-neutral 3)Interpreted 4)High performance 5) Distributed 6) Portable 7) Dynamic **07**
- (b) Explain :this,super,static,final ,finally, static and garbage collection **07**
- Q.2** (a) Write a program that illustrates interface inheritance. Interface A is extended by A1 and A2. Interface A12 inherits from both P1 and P2.Each interface declares one constant and one method. Class B implements A12.Instantiate B and invoke each of its methods. Each method displays one of the constants **07**
- (b) What is collection in Java? Differentiate between Vector and Array List.. **07**
- OR**
- (b) The Transport interface declares a deliver () method. The abstract class Animal is the super class of the Tiger, Camel, Deer and Donkey classes. The Transport interface is implemented by the Camel and Donkey classes. Write a test program that initialize an array of four Animal objects. If the object implements the Transport interface, the deliver () method is invoked. **07**
- Q.3** (a) Compare String with StringBuffer. Also write a program to count occurrence of character in a string.. **07**
- (b) Explain inner class and working of concatenation operator + by giving examples. **07**
- OR**
- Q.3** (a) Write an application that creates and starts three threads. Each thread is instantiated from the same class. It executes a loop with 10 iterations. Each iteration displays string "HELLO", sleeps for 300 milliseconds. The application waits for all the threads to complete & displays the message "Good Bye..." **07**
- (b) What is Wrapper class in Java? Explain with examples. **07**
- Q.4** (a) Write a complete program to have 3 Buttons in a frame having exit capabilities. Buttons are to be added in the frame as per the layout of your choice. Count and display number of times each Button being clicked. **07**
- (b) Enlist and explain the difference between error and exception. Write a program to handle InterruptedException, IllegalArgumentException using try-catch-finally and throw **07**
- OR**
- Q.4** (a) Write a method for computing xy by doing repetitive multiplication. x and y are of type integer and are to be given as command line arguments. Raise and handle exception(s) for invalid values of x and y. Also define method main. Use finally in above program and explain its usage. **07**
- (b) Write an applet that draws four horizontal bars of equal size & of different colors such that they cover up the whole applet area. The applet should operate correctly even if it is resized **07**
- Q.5** (a) Explain various methods called during execution cycle of the applet. Also explain boarder layout. **07**
- (b) Explain Generics in java with demo program. **07**

OR

- Q.5 (a)** Write a program that counts the no. of words in a text file. The file name is passed as a command line argument. The program should check whether the file exists or not. The words in the file are separated by white space characters. **07**
- (b)** Differentiate between abstract class and interface specifying matrices of differences. Write a program to define abstract class, with two methods addition() and subtraction(). addition() is abstract method. Implement the abstract method and call that method using a program(s). **07**
