Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE- SEMESTER–V (NEW) EXAMINATION – WINTER 2020

Subject Code:3153203   **Date:03/02/2021**
Subject Name:Object Oriented Programming with Java
Time:10:30 AM TO 12:30 PM   **Total Marks: 56**

Instructions:
1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

			MARKS
Q.1	**(a)**	Define following: 1) Byte code 2) JVM 3) Unicode	**03**
	(b)	What is Java? Explain any four features?	**04**
	(c)	Write a program to check whether the input number is a palindrome or not without using reverse() method of String class? E.g. a palindrome is a sequence of characters/numbers which reads the same backward as forward like 323, 45654 etc.	**07**
Q.2	**(a)**	What is the difference between String & StringBuffer? Explain with examples.	**03**
	(b)	State difference between with e.g.: Abstract & interfaces Method Overloading & Method overriding	**04**
	(c)	Write a program called SumDigits to sum up the individual digits of a positive integer, given in the command line. An example is shown below: java SumDigits 12345 The sum of digits = 1 + 2 + 3 + 4 + 5 = 15	**07**
Q.3	**(a)**	State the difference between with examples with respect to string handling in java: 1. append() and insert() 2. length() and capacity()	**03**
	(b)	What is a thread? Discuss java thread model?	**04**
	(c)	What are packages in JAVA? Explain their types and utility while programming in java language?	**07**
Q.4	**(a)**	State the difference between final and finally keyword?	**03**
	(b)	What are streams? Explain their types?	**04**
	(c)	Write a program using Character streams to copy from file from.txt, one byte at a time to a new file to.txt.	**07**
Q.5	**(a)**	What is an exception? State its types?	**03**
	(b)	Explain the Client-Server Architecture and its components?	**04**
	(c)	Write a program to create an object of the Collections class LinkedList and add and remove elements from it? Show all the cases of adding and removing elements at first, last and specific index in the program.	**07**
Q.6	**(a)**	What Is a Collections Framework?	**03**

	(b)	Explain the concept of garbage collection and show the importance of finalize keyword?	**04**
	(c)	Write a program for java socket programming where client sends a text and server receives and prints it?	**07**
Q.7	**(a)**	What are object and class diagram? Explain with example.	**03**
	(b)	Draw a sequence diagram for an ATM operation management system?	**04**
	(c)	Draw a state diagram for answering a telephone call?	**07**
Q.8	**(a)**	Explain multiplicity and its notations used in class diagram?	**03**
	(b)	State the difference between: 1. Link and Associations 2. Generalization and Specialization	**04**
	(c)	Draw a use case diagram for a University Management System?	**07**

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