Seat No.: _____ Enrolment No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– V (New) EXAMINATION – WINTER 2019

Subject Code: 2150704 **Date: 02/12/2019**

Subject Name: Object Oriented Programming using 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.**

			MARKS
Q.1	**(a)**	Explain any three features of JAVA.	**03**
	(b)	What is a constructor in JAVA? How many types of constructors are there in JAVA? Explain with examples.	**04**
	(c)	Write a JAVA program to implement the Fibonacci series using for loop control structure.	**07**
Q.2	**(a)**	Explain the use of final keyword in JAVA.	**03**
	(b)	What is a thread? Describe the complete life cycle of thread.	**04**
	(c)	Write a JAVA program to create a super class called figure that stores the dimensions of a two-dimensional object. It also defines a method called area () that computes the area of an object. The program derives two sub classes from figure. The first is rectangle and the second is Triangle. Each of these subclasses overrides area (), so that it returns the area of a rectangle and a triangle respectively.	**07**
		OR	
	(c)	Define exception. List java's common exceptions. Write a JAVA program to generate and handle division by zero arithmetic exception.	**07**
Q.3	**(a)**	Differentiate multithreading and multiprocessing.	**03**
	(b)	Differentiate method overloading and method overriding with the help of example.	**04**
	(c)	Discuss various access modifiers available in JAVA? How access modifier affects the visibility of a member in different access locations?	**07**
		OR	
Q.3	**(a)**	Explain garbage collection and finalization.	**03**
	(b)	Explain Super keyword with the help of example.	**04**
	(c)	Discuss the role of thread synchronization in inter-thread communication? Explain with example.	**07**
Q.4	**(a)**	Describe the following methods related to String i) replace() ii) compareTo()	**03**
	(b)	How package can be created in JAVA? Explain with suitable example.	**04**
	(c)	Prepare a sequence diagram for hotel management system.	**07**
		OR	
Q.4	**(a)**	Explain the following terms with respect to exception handling. i) throw ii) finally	**03**
	(b)	Describe dynamic method dispatch with example.	**04**
	(c)	Explain activity diagram with the help of an example.	**07**

Q.5	**(a)**	Explain 'ordered', 'bags' and 'sequences' with respect to class diagram.	**05**
	(b)	Explain generalization in class diagram with example.	**04**
	(c)	Define object orientation. Explain the stages of object orientation methodology.	**07**

OR

Q.5	**(a)**	Explain metadata with the help of example.	**03**
	(b)	Discuss link and association in UML with diagram.	**04**
	(c)	Draw use case diagram for library management system.	**07**

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