Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER– III EXAMINATION – WINTER 2018

Subject Code: 4639302   **Date: 04-01-2019**
Subject Name: Object Oriented Programming in JAVA
Time: 10.30 am to 1.00 pm   **Total Marks: 70**
Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	State whether the below statements are True or False	**07**
		1. A single Java file can contain multiple classes. (True / False)	
		2. Accessor method is allowed to modify the member variables of a calss. (True / False)	
		3. String is primitive data type. (True / False)	
		4. JAVA supports multilevel inheritance. (True / False)	
		5. finally block is not called if try block does not generate exception. (True / False)	
		6. Lambda expression is a block of code. (True / False)	
		7. InputStream is used to write data to destination. (True / False)	
	(b)	List down the characteristics of JAVA and explain any 4 of them in detail.	**07**
Q.2	**(a)**	Explain the arithmetic and relational operators using suitable examples.	**07**
	(b)	1. Are objects of String class mutable or immutable? Explain what are mutable and immutable variables using String as an example.	**04**
		2. Explain the equals, hashcode and toString methods of Object class.	**03**
		OR	
	(b)	1. Discuss the different types of for loop statements using suitable examples.	**04**
		2. Explain the statements used for breaking the control flow using suitable example.	**03**
Q.3	**(a)**	Discuss the concept of classes and objects with respect to object oriented programming.	**07**
	(b)	What is the purpose of package and import statements? Explain using suitable example.	**07**
		OR	
Q.3	**(a)**	Discuss the usage of Comparable interface for comparing two user defined objects.	**07**
	(b)	What are the two types of polymorphism? Demonstrate use of method overriding using suitable example.	**07**
Q.4	**(a)**	What is a Lambda expression? Show the benefit of using Lambda expression through example.	**07**
	(b)	List down the keywords in JAVA used for implementing exception handling and explain each of them.	**07**
		OR	
Q.4	**(a)**	What is inner class? How can outer class reference be accessed inside inner class? Illustrate use of inner class using suitable example.	**07**
	(b)	Discuss the benefits of generic programming. What are the inheritance rules for generic types?	**07**
Q.5	**(a)**	Show how can we read and write text in a text file using FileReader and PrintWriter.	**07**

(b) Using sample code, show how PreparedStatement can be used to access data in a database. **07**

OR

Q.5 **(a)** Illustrate the use of RandomAccessFile for reading and writing data in a text file. **07**

(b) Write a program to illustrate the use of command line arguments. Also implement necessary exception handling. **07**

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