Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA – SEMESTER-III EXAMINATION –SUMMER-2020

Subject Code: 4639302   **Date:05-11-2020**
Subject Name: Object Oriented Programming in 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.

Q.1	**(a)**	Attempt the following questions:	**02**
		i) Define a class and an object.	**02**
		ii) Explain term "extends".	**02**
		iii) What is "inner" class?	**01**
		iv) Define the task of "javac" and "java" command.	

(b) i) Fill in the blanks: **03**
    1. _____ is super class of all classes.
    2. To restrict to inherit a class, the class should be declared as_____.
    3. _____ block is executed only once at the time of execution of an application.

ii) State whether the following statements are true or false. Justify your **04**
answers.
    1. One class cannot be derived from more than one class in java.
    2. Multiple references can point to a single instance.
    3. Abstract class has no constructor.
    4. An object can be created for an interface.

Q.2 **(a)** How can an array of primary data type and user-defined data type (class) be **07**
declared and used in java? Explain array of primary data type and user
defined data type where array values are accepted as input.

(b) Design a class "student" which has variables std_id, std_name, std_total_marks; **07**
default & parameterized constructor;
"mca_student" class is derived from "student" class. It has extra variable
project_marks, default and parameterized constructor within application.
Create two objects of type "mca_student". One is created by calling default
constructor and another one is called by parameterized constructor.
Explain the process of calling of derived and super class constructor at the time
of creation of objects with the help of above mentioned application.

OR

(b) Design a class which contains initialization block, static initialization block and **07**
constructor.
Create two objects and show the flow of execution of blocks and constructor in
a java application.

Q.3 **(a)** Differentiate in between class, abstract class and interface with a Java program. **07**
(b) Explain the process of creating and using user defined package in java. Give **07**
Example.

OR

Q.3 **(a)** Discuss method overriding and method overloading which are implemented in **07**
Java?
(b) How a simple generic class and generic method are declared in java program? **07**

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Q.4	**(a)**	Describe "final" keyword for class, instance variable and method using inheritance in java program.	**07**
	(b)	How can "copying", "deleting" and "moving" file operations be done in java program?	**07**

OR

Q.4	**(a)**	How to read text input from .txt file and how to write text output into file in java program?	**07**
	(b)	How can an exception be handled in java code? State the advantages of exception handling. Explain "try", "catch" block and "throw" keyword with java code.	**07**

Q.5	**(a)**	Explain "Prepared statement" and implement this statement in java application.	**07**
	(b)	Develop a calculator application which computes four arithmetic operations (+,-,*, /). Choice (operator) is accepted as an input and operands are also accepted as input. After computation, output will be displayed. Declare a class "calculator".	**07**

OR

Q.5	**(a)**	What is "Comparable" interface, "Object" class & "String" class? Explain with code.	**07**
	(b)	How can database be connected with java application and be executed SQL statement through java application.	**07**

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