GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–IV (NEW) EXAMINATION – SUMMER 2021

Subject Code:3140705   **Date:11/09/2021**
Subject Name:Object Oriented Programming -I
Time:02:30 PM TO 05:00 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.**

			MARKS
Q.1	**(a)**	Define object oriented concepts.	**03**
	(b)	What is the difference between the StringBuffer and StringBuilder classes?	**04**
	(c)	Define constructor. How objects are constructed? Explain constructor overloading with an example.	**07**
Q.2	**(a)**	Explain about arrays, Type of arrays and arrays methods.	**03**
	(b)	Explain about Encapsulation, Abstraction.	**04**
	(c)	State the design hints for class and inheritance. Also discuss the working and meaning of the "static" modifier with suitable examples.	**07**

OR

	(c)	Explain in detail how inheritance and polymorphism are supported in java with necessary examples.	**07**
Q.3	**(a)**	Explain about different types of string methods.	**03**
	(b)	Write short notes on access specifiers and modifiers in java.	**04**
	(c)	What is an Exception? Explain the exception hierarchy. Explain how to throw, catch and handle Exceptions.	**07**

OR

Q.3	**(a)**	Explain about Final class, Fields, Methods.	**03**
	(b)	What is a Package? What are the benefits of using packages? Write down the steps in creating a package and using it in a java program with an example.	**04**
	(c)	Explain the concept of inner classes and explain the types of inner classes with an example program.	**07**
Q.4	**(a)**	What is Dynamic binding? Show with an example how dynamic binding works.	**03**
	(b)	Write short notes about I/O stream classes.	**04**
	(c)	Explain the thread state, thread properties and thread synchronization.	**07**

OR

Q.4	**(a)**	Explain the concept of finalization.	**03**
	(b)	What is reflection and how does it help to manipulate java code.	**04**
	(c)	Write a java program to implement the multiple inheritance concepts for calculating area of circle and square.	**07**
Q.5	**(a)**	Explain about callback	**03**
	(b)	Explain the interface with an example program.	**04**
	(c)	What is Generic programming and why is it needed? Explain with example. List the limitations and restrictions of generic programming	**07**

Q.5 **(a)** Explain about Proxy class, Interface and Methods. **03**

(b) Explain about adapter classes and mouse events with an example. **04**

(c) With a neat diagram explain the Model view controller design pattern and list out the advantages and disadvantages of using it in designing an application. **07**

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