

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**MCA INTEGRATED– SEMESTER -III EXAMINATION –SUMMER-2021**

**Subject Code: 2638601****Date: 17/09/2021****Subject Name: Object Oriented Programming in JAVA****Time: 02:30 PM TO 5:00 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)** Write Short note on the following: **07**
- (i) Byte Code
  - (ii) Polymorphism
  - (iii) Static Initializer Block
  - (iv) Package
  - (v) Interface
  - (vi) Exception
  - (vii) Deamon thread
- (b)** Explain importance of constructor. Discuss the overloading of methods and constructors with suitable java program code. **07**
- Q.2 (a)** Explain the difference between the variables of primitive data types and the reference data types. **07**
- (b)** What do you understand by anonymous Inner class? What is the significance of this class in java program? **07**
- OR**
- (b)** Explain the features of Java Programming Language. **07**
- Q.3 (a)** What role does an interface play in multiple inheritances? Differentiate between abstract class and an interface. Explain with suitable example. **07**
- (b)** Define checked exceptions and unchecked exceptions. Explain throw, throws, try and catch keywords with example. **07**
- OR**
- Q.3 (a)** What are the access specifiers available in Java? Explain each of them and state which of these can be applied to members of a class and which can be applied to members of a package. **07**
- (b)** What is method overriding? Explain the uses of this and super keyword with example. **07**
- Q.4 (a)** What is Collection framework? Explain the List Interface with Example **07**
- (b)** Define Thread. How different way thread is created in Java? Discuss the Thread life cycle with suitable example of java program code. **07**
- OR**
- Q.4 (a)** What is difference between Vector and Hashtable class? How the Enumeration interface is useful in Java explain with code? **07**
- (b)** Write a java program that will write 10 numbers in text file and also read from that file to print that 10 numbers on the screen using byte stream based classes. **07**

- Q.5 (a)** To create two different threads. One thread to display odd numbers between 1 to 40 at every 1 second and other thread to display even numbers between 1 to 20 at every 2 seconds. **07**
- (b)** Define File. Discuss any six methods of file class. **07**
- OR**
- Q.5 (a)** Explain Random Access File in detail. **07**
- (b)** Write a program of threads to show inter-communication of two threads: t1 and t2 synchronizing on a shared object. Let t1 print message “ping --->” and t2 print message “<--- pong”. Make the threads execute in a way that the output displays a consistent patterns of “ping ---> <--- pong” **07**

\*\*\*\*\*