**Object Oriented Programming - CS3391**

**PART-A**

**UNIT I: INTRODUCTION TO OOP AND JAVA**

1. **What is Object-Oriented Programming (OOP)?**
   * OOP is a programming paradigm based on the concept of "objects" which encapsulate data and methods.
2. **Mention any two features of OOP.**
   * Inheritance and Polymorphism.
3. **What is the purpose of Java Doc comments?**
   * Java Doc comments are used to generate HTML documentation for Java code.
4. **Name any two Java buzzwords.**
   * Platform Independent, Robust.
5. **What is the use of static members in Java?**
   * Static members belong to the class rather than instances and are shared among all objects.
6. **Define constructor.**
   * A constructor is a special method used to initialize objects.
7. **What are access specifiers?**
   * Access specifiers define the visibility of classes, methods, and variables (e.g., public, private).
8. **Mention any two data types in Java.**
   * int, float.
9. **List any two control statements in Java.**
   * if, switch.
10. **What is the role of arrays in Java?**

* Arrays store multiple values of the same type in a single variable.

**UNIT II: INHERITANCE, PACKAGES AND INTERFACES**

1. **Define method overloading.**
   * Method overloading allows multiple methods with the same name but different parameters.
2. **What is the use of the super keyword?**
   * The super keyword is used to call superclass constructors or methods.
3. **Mention any two types of inheritance.**
   * Single inheritance, Multilevel inheritance.
4. **What is method overriding?**
   * Method overriding allows a subclass to provide a specific implementation of a superclass method.
5. **What is an abstract class?**
   * An abstract class cannot be instantiated and may contain abstract methods.
6. **What is the role of the final keyword in inheritance?**
   * It prevents a class from being subclassed or a method from being overridden.
7. **Define interface in Java.**
   * An interface is a reference type in Java that can contain abstract methods and constants.
8. **How do you import a package in Java?**
   * Using the import keyword, e.g., import java.util.\*;
9. **Mention one difference between packages and interfaces.**
   * Packages group related classes; interfaces define a contract for classes.
10. **What are nested classes?**

* Classes defined within another class.

**UNIT III: EXCEPTION HANDLING AND MULTITHREADING**

1. **What is an exception?**
   * An exception is an event that disrupts the normal flow of the program.
2. **What is the use of try-catch block?**
   * It handles exceptions to prevent program termination.
3. **What is multithreading?**
   * Multithreading allows concurrent execution of two or more threads.
4. **What is the use of the synchronized keyword?**
   * It is used to control access to methods or blocks by multiple threads.
5. **What is a wrapper class?**
   * A wrapper class converts primitive types into objects, e.g., Integer for int.
6. **Define auto-boxing.**
   * Automatic conversion of primitive types to corresponding wrapper objects.
7. **What is thread priority?**
   * Thread priority determines the order in which threads are scheduled.
8. **Mention any two thread states.**
   * Runnable, Blocked.
9. **What is inter-thread communication?**
   * Mechanism that allows synchronized communication between threads using wait, notify.
10. **List any two built-in exceptions in Java.**

* ArithmeticException, NullPointerException.

**UNIT IV: I/O, GENERICS, STRING HANDLING**

1. **What is console I/O in Java?**
   * It refers to input and output operations performed via the console using Scanner or System.out.
2. **Define generics.**
   * Generics allow type-safe data structures and methods.
3. **What is the purpose of the String class?**
   * To represent sequences of characters.
4. **Mention one method of the String class.**
   * length(), which returns the length of the string.
5. **What is a generic method?**
   * A method that is written with a generic type parameter.
6. **What is bounded type in generics?**
   * A generic type limited to a certain class or subclass.
7. **Name a method to read from a file in Java.**
   * FileReader.
8. **What is StringBuffer class used for?**
   * It is used for mutable sequence of characters.
9. **Name any one limitation of generics.**
   * Cannot create an instance of a generic type.
10. **What is the difference between String and StringBuffer?**

* String is immutable; StringBuffer is mutable.

**UNIT V: JAVAFX EVENT HANDLING, CONTROLS AND COMPONENTS**

1. **What is an event in JavaFX?**
   * An occurrence triggered by user interaction like a button click.
2. **What is a ScrollPane in JavaFX?**
   * A layout container that provides a scrollable view of its contents.
3. **What is the use of a ComboBox?**
   * It allows the user to choose one value from a list.
4. **Define ToggleButton.**
   * A control that can be switched between two states.
5. **What is VBox in JavaFX?**
   * A layout pane that arranges its children vertically.
6. **What is a MenuItem?**
   * An item in a menu that can be selected to perform an action.
7. **What is GridPane used for?**
   * To arrange nodes in a grid of rows and columns.
8. **What are Text Controls in JavaFX?**
   * Controls like TextField and TextArea for user input.
9. **Mention one key event type in JavaFX.**
   * KeyPressed.
10. **What is the use of ListView?**

* Displays a list of items for user selection.