

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

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QUESTIONBANK(DESCRIPTIVE)

Course & Branch: CSE, CAD, CSM, CAI, CCC, CIC, CIA and CSIT **Year & Sem:** II-B. Tech & I-Sem

Subject with Code: Object Oriented Programming Through JAVA (23CS0508) **Regulation:** R23

UNIT I

Introduction to OOP, Operators and Statements in Java

1	a	What are the fundamental concepts of Object-Oriented Programming?	L1, CO1	2M
	b	List the Java language buzzwords.	L1, CO1	2M
	c	What is an escape sequence? Explain with suitable examples.	L1, CO1	2M
	d	Define a variable. List the different types of variables in Java.	L1, CO1	2M
	e	Define the ternary operator and write its syntax.	L1, CO1	2M
2	a	Explain the principles of Object-Oriented Programming.	L2, CO1	5M
	b	Describe the step-by-step process of creating, compiling, and executing a Java program using the JVM.	L2, CO1	5M
3	a	Explain the basic structure of a Java program.	L2, CO1	5M
	b	Write a simple Java program to illustrate the structure of a Java program.	L6, CO1	5M
4	a	What is a token in Java? Explain the different types of tokens available in Java with examples.	L3, CO1	5M
	b	List and explain the various types of statements in Java.	L2, CO1	5M
5	a	Develop a Java program to demonstrate the use of command-line arguments.	L6, CO1	5M
	b	Explain how to accept user input using the Scanner class with an example.	L2, CO1	5M
6	a	List and explain the different data types in Java with suitable examples.	L2, CO1	5M
	b	Explain type conversion and type casting in Java with examples.	L3, CO1	5M
7	a	Explain the scope of variables and methods with suitable examples.	L3, CO1	4M
	b	List and explain the rules for naming identifiers in Java.	L2, CO1	4M
	c	Identify the different types of literals in Java with examples.	L3, CO1	2M
8	a	Explain formatted output in Java using the printf() method with an example.	L3, CO1	4M
	b	Explain the static and final keywords with suitable examples.	L3, CO1	3M
	c	Explain operator precedence and associativity in Java.	L2, CO1	3M
9	a	What is an operator? Explain the different types of operators available in Java.	L2, CO1	5M
	b	List the selection statements available in Java and explain each with a suitable example.	L2, CO1	5M
10	a	Classify the looping statements available in Java and explain each with an example.	L4, CO1	5M
	b	Write a Java program to calculate the factorial of a given number.	L6, CO1	5M
11	a	Classify the jump statements available in Java and explain each with an example.	L4, CO1	5M
	b	Develop a Java program to implement a basic calculator using the switch statement.	L6, CO1	5M

UNIT II

Classes, Objects and Methods

1	a	What is constructor overloading?	L1, CO2	2M
	b	What is a nested class in Java?	L1, CO2	2M
	c	List the access specifiers available in Java.	L1, CO2	2M
	d	What is the purpose of the 'this' keyword in Java?	L1, CO2	2M
	e	Define a method in Java.	L1, CO2	2M
2	a	Explain the definition and syntax of a class, method, and object in Java.	L2, CO2	5M
	b	Write a Java program to display "Hello! Java" using a class, object, and method.	L6, CO2	5M
3	a	Develop a Java program to demonstrate assigning one object to another.	L6, CO2	5M
	b	Explain the access control mechanisms for class members with a suitable example.	L2, CO2	5M
4	a	Explain how private members can be accessed with a suitable example.	L2, CO2	5M
	b	Define a constructor. Classify the different types of constructors in Java.	L4, CO2	5M
5	a	Explain constructor overloading with a suitable example.	L2, CO2	5M
	b	Explain nested classes with a suitable example.	L2, CO2	5M
6	a	Explain the applications of the final keyword with variables, methods, and classes, supported by suitable examples.	L2, CO2	5M
	b	Write a Java program to demonstrate pass-by-value.	L6, CO2	5M
7	a	Write a Java program to demonstrate pass-by-reference.	L6, CO2	5M
	b	Develop a Java program to illustrate constructor overloading.	L6, CO2	5M
8		Define method overloading. Explain how methods can be overloaded with a suitable example.	L2, CO2	10M
9	a	Differentiate between method overloading and method overriding.	L4, CO2	5M
	b	Write a Java program to demonstrate passing an object as a parameter to a method.	L6, CO2	5M
10	a	Write a Java program to find the factorial of a given number using a recursive method.	L6, CO2	5M
	b	Develop a Java program to demonstrate the nesting of methods.	L6, CO2	5M
11	a	Differentiate method overriding with a suitable example.	L4, CO2	5M
	b	Differentiate between the final and static attributes in Java.	L4, CO2	5M

UNIT III

Arrays, Inheritance and Interfaces

1	a	How do you declare an array in Java?	L1, CO3	2M
	b	How do you access the elements of an array in Java?	L1, CO3	2M
	c	What is the purpose of the 'super' keyword? Give an example.	L1, CO3	2M
	d	What is the purpose of an interface in Java?	L1, CO4	2M
	e	Define annotations.	L1, CO4	2M
2	a	Define an array. Classify the different types of arrays in Java.	L4, CO3	4M
	b	Explain how arrays are stored in computer memory.	L3, CO3	4M
	c	Explain how to access the elements of an array.	L3, CO3	2M
3	a	Discuss the operations performed on array elements.	L2, CO3	3M
	b	Develop a Java program to demonstrate assigning one array to another array.	L6, CO3	4M
	c	Explain the dynamic resizing of an array.	L3, CO3	3M
4	a	Write a Java program to sort the elements of an array in ascending order.	L6, CO3	5M
	b	Develop a Java program to check whether an array contains a given value.	L6, CO3	5M
5	a	Explain two-dimensional and three-dimensional arrays with suitable examples.	L6, CO3	4M
	b	Describe arrays of varying length with a suitable example.	L2, CO3	4M
	c	Differentiate between arrays and vectors.	L4, CO3	2M
6	a	Explain inheritance and list the different types of inheritance.	L2, CO3	4M
	b	Illustrate the universal superclass (Object class) and its methods.	L3, CO3	3M
	c	Explain how the final keyword inhibits inheritance of a class.	L4, CO3	3M
7	a	Explain access control in inheritance.	L3, CO3	3M
	b	Develop a Java program to demonstrate multilevel inheritance.	L6, CO3	4M
	c	Describe the use of the 'super' and 'final' keywords in inheritance with an example.	L2, CO3	3M
8	a	Develop a Java program to demonstrate constructor invocation in inheritance.	L6, CO3	5M
	b	Differentiate between method overriding and dynamic method dispatch.	L6, CO3	5M
9	a	What is an abstract class? Explain the different ways to implement an abstract class.	L2, CO4	5M
	b	What is an interface? Explain the rules for creating an interface in Java with a suitable example.	L6, CO4	5M
10	a	Explain nested interfaces and multiple interfaces with suitable examples.	L2, CO4	4M
	b	Develop a Java program to demonstrate interface inheritance.	L6, CO4	3M
	c	Develop a Java program to demonstrate default methods in interfaces.	L6, CO4	3M
11	a	Illustrate: (i) Static methods in interfaces (ii) Functional interfaces.	L3, CO4	5M
	b	Classify the different types of annotations.	L4, CO4	5M

UNIT IV

Packages, java Library, Exception Handling, Java I/O and File

1	a	What is a package? How do you define a package in Java?	L1, CO5	2M
	b	Define the Java library.	L1, CO5	2M
	c	What is the Math class in Java?	L1, CO5	2M
	d	What is an uncaught exception?	L1, CO5	2M
	e	Define byte streams.	L1, CO5	2M
2	a	What is a package? Explain packages in Java with an example and describe how to import packages.	L2, CO5	5M
	b	Explain the step-by-step procedure for setting the PATH and CLASSPATH.	L2, CO5	5M
3	a	Explain access control in packages.	L3, CO5	4M
	b	Illustrate the packages available in Java SE in detail.	L3, CO5	3M
	c	Explain the java.lang package and its classes.	L3, CO5	3M
4	a	Define enumeration. Explain how to use the enum keyword in Java.	L2, CO5	5M
	b	Illustrate wrapper classes in Java and explain their advantages.	L3, CO5	5M
5	a	Demonstrate autoboxing and auto-unboxing in Java.	L2, CO5	4M
	b	Illustrate the Java utility classes and interfaces.	L3, CO5	3M
	c	Differentiate between Formatter class and Random class.	L4, CO5	3M
6	a	What is the Java Time package? Develop a Java program for date and time formatting.	L6, CO5	5M
	b	Explain the Instant class and TemporalAdjuster class.	L3, CO5	5M
7	a	What is an exception? Explain the different types of exceptions.	L2, CO5	4M
	b	Explain the use of try and catch blocks in Java.	L2, CO5	3M
	c	Illustrate the hierarchy of standard exception classes.	L3, CO5	3M
8	a	Explain the use of throw, throws, and Throwable with suitable examples.	L3, CO5	5M
	b	What are Java's built-in exceptions? Explain the importance of the finally block.	L3, CO5	5M
9	a	Explain multiple catch blocks with a suitable example.	L2, CO5	5M
	b	Differentiate between checked exceptions and unchecked exceptions.	L4, CO5	5M
10	a	Explain the Java I/O API with suitable examples.	L3, CO5	5M
	b	Discuss FileInputStream and FileOutputStream in Java with suitable examples.	L2, CO5	5M
11	a	Illustrate the different types of file operations in Java.	L3, CO5	5M
	b	Differentiate between byte streams and character streams.	L4, CO5	5M
12	a	Explain how to write to and read from a file in Java with a suitable example.	L2, CO5	5M
	b	List and explain the file handling methods provided by the File class.	L2, CO5	5M

UNIT-V
String Handling, Multithreading Programming and Java
Database Connectivity

1	a	What is a String in Java? Is String a data type?	L1, CO5	2M
	b	Differentiate between the String and StringBuffer classes.	L3, CO5	2M
	c	What is the difference between the run() and start() methods in threads?	L1, CO6	2M
	d	List the JDBC product components.	L1, CO6	2M
	e	What is the JavaFX GUI?	L1, CO6	2M
2	a	Define a String. Explain the different ways of declaring strings with a suitable example.	L2, CO5	5M
	b	Develop a Java program to check whether a given string is a palindrome.	L6, CO5	5M
3	a	Differentiate between the String class and StringBuffer class, including their methods, with suitable examples.	L5, CO5	5M
	b	What is multithreading? Explain the different ways to create multiple threads in Java.	L3, CO6	5M
4	a	Discuss the need for multithreading in multicore processors.	L2, CO6	5M
	b	Develop a Java program to demonstrate the main thread and the creation of new threads.	L6, CO6	5M
5	a	Discuss the life cycle of a thread and thread priorities with a neat diagram.	L2, CO6	5M
	b	What is thread synchronization? Explain with a suitable example.	L2, CO6	5M
6	a	Explain deadlock and race conditions with suitable examples.	L3, CO6	5M
	b	Describe inter-thread communication.	L2, CO6	5M
7	a	Explain the methods used for suspending, resuming, and stopping threads.	L2, CO6	5M
	b	Define JDBC. Explain the importance of JDBC.	L2, CO6	5M
8	a	Discuss the JDBC architecture in detail.	L2, CO6	5M
	b	Explain the installation process of MySQL and MySQL Connector/J.	L6, CO6	5M
9	a	Explain the JDBC environment setup and the steps to establish a JDBC database connection.	L3, CO6	5M
	b	Describe the ResultSet interface with suitable examples.	L2, CO6	5M
10	a	Explain the window structure of a JavaFX application.	L2, CO6	5M
	b	Develop a Java program to display text and images using the JavaFX GUI.	L6, CO6	5M
11	a	Describe the event handling methods in the JavaFX GUI.	L2, CO6	5M
	b	Explain the various scene graph components and mouse events in JavaFX with suitable examples.	L2, CO6	5M