Reg. No.												

Question Paper Code	12521

B.E. / B.Tech - DEGREE EXAMINATIONS, NOV / DEC 2023

Third Semester

Computer Science and Engineering

(Common to Information Technology, Computer Science and Business Systems, Computer Science and Engineering (Cyber security), Computer Science and Engineering (AIML) & Computer Science and Engineering (IoT) & Fifth Semester - Computer and Communication Engineering)

20CSPC301 - OBJECT ORIENTED PROGRAMMING

(Regulations 2020)

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	What is JVM?	*2,K1,CO1*
2.	List the access specifier in JAVA with its functionality.	*2,K1,CO1*
3.	Is JAVA supports Multiple Inheritance? Justify your answer.	*2,K2,CO2*
4.	Differentiate abstract class from interface.	*2,K2,CO2*
5.	What is the difference between a static and a non-static inner class?	*2,K2,CO3*
6.	What do you mean by object cloning?	*2,K2,CO3*
7.	What is meant by an input and output stream?	*2,K2,CO4*
8.	Can an Exception be re-thrown? How?	*2,K1,CO4*
9.	Differentiate multithreading from multitasking.	*2,K2,CO5*
10.	What is thread synchronization?	*2,K1,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Explain the concepts of Object Oriented Programming in JAVA.	*13,K2,CO1*
		OR	
	b)	Illustrate the types of constructor in JAVA with example.	*13,K2,CO1*
12.	a)	Explain in detail about Packages.	*13,K3,CO2*
		OR	
	b)	What is inheritance in java? Explain different types of inheritance with proper example partial code.	*13,K3,CO2*

13. a) Create a program that uses Array List to manage a list of books in a library. Allow users to add, remove, and search for books, demonstrating the dynamic nature of Array List. *13,K3,CO3*

OR

b) Write a JAVA program to perform the following string operations *13,K3,CO3*
   (i) Find String Length
   (ii) Compare two String
   (iii) Concatenate two strings
   (iv) Reverse the given string

14. a) Develop a Java program that uses custom exceptions to handle errors in a grading system. If a student's grade is outside the valid range (0-100), throw a custom exception 'InvalidGradeException'. *13,K2,CO4*

OR

b) Implement a program that uses FileInputStream and FileOutputStream to copy the contents of one binary file to another. Include exception handling for potential I/O issues. *13,K2,CO4*

15. a) Illustrate the life cycle of thread with neat diagram. *13,K3,CO5*

OR

b) Demonstrate generic programming in detail with example. *13,K3,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Design a simple reactive programming scenario in Java using reactive streams. Demonstrate how reactive programming helps handle asynchronous events. *15,K3,CO6*

OR

b) Explain in detail about lambda expressions with suitable examples. *15,K3,CO6*