Reg. No. [   ]

Question Paper Code	13125

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2024
Third Semester

Computer Science and Engineering

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

20CSPC301 - OBJECT ORIENTED PROGRAMMING

Regulations - 2020

Duration: 3 Hours   Max. Marks: 100

PART - A (MCQ) (20 × 1 = 20 Marks)
Answer ALL Questions

		Marks	K-Level	CO

1. Which of the following is not an OOPS concept?   —   1, K1, CO1
   (a) Encapsulation   (b) Polymorphism   (c) Exception   (d) Abstraction

2. What is the purpose of a package in Java?   —   1, K1, CO1
   (a) To provide access control mechanisms
   (b) To group related classes and interfaces
   (c) To speed up the execution time of programs
   (d) To serve as containers for Java applets

3. Which of the following definition is incorrect for polymorphism?   —   1, K1, CO1
   (a) Polymorphism helps in redefining the same functionality
   (b) Polymorphism concept is the feature of object-oriented programming (OOP)
   (c) It always increases the overhead of function definition
   (d) Ease in the readability of the program

4. Which of these keywords cannot be used for a class which has been declared final?   —   1, K1, CO2
   (a) abstract   (b) extends   (c) abstract and extends   (d) none of the mentioned

5. ____is a way to comment your code that enables automatic generation of web pages that document your code.   —   1, K1, CO2
   A) javadoc   (b) java byte code   (c) javascript   (d) both javadoc and java byte code

6. How can you access the hidden variable of the superclass when a subclass has re-declared a variable with the same name?   —   1, K1, CO2
   (a) By using the "super" keyword as a prefix to access the superclass variable
   (b) By renaming the superclass variable in the subclass
   (c) By defining the variable as "public" in the superclass
   (d) By using the "extends" keyword

7. The _____ method is used to clone an object.   —   1, K1, CO3
   (a) clone()   (b) index()   (c) copy()   (d) repeat()

8. How many ways are there to create string objects?   —   1, K1, CO3
   (a) 5   (b) 3   (c) 2   (d) 1

9. What will be the output of the following Java code?   —   1, K1, CO3
```
public class Main {
public static void main(String args[]) {
String str = "Java Programming";
String subStr = str.substring(5, 12);
System.out.println(subStr);
}   }
```
   (a) Programming   (b) "Java"   (c) "Program"   (d) "ogram P"

10. All subclasses of Runtime Exceptions are _____ 1 K1 CO4
    (a) Unchecked Exceptions   (b) Checked exceptions
    (c) IO Exception   (d) Arithmetic Exception

11. In java , -------------- represents a sequence of objects from a source, which supports 1 K1 CO4
    aggregate operations.
    (a) Stream   (b) pointer   (c) template   (d) lambda expression

12. What will be the output of the following Java code? 1 K1 CO4
    public class ExceptionExample {
    public static void main(String[] args) {
    int result = 0;
    try {
    result = 10 / 2;
    } catch (ArithmeticException e) {
    System.out.println("Arithmetic Exception");
    } finally {
    System.out.println("Finally Block");
    }
    System.out.println("Result: " + result);
    } }
    (a) Finally Block   (b) Arithmetic Exception   (c) Finally Block, Result: 5   (d) Result: 5

13. The _____ method is used to wake up all waiting threads,allowing them to compete for 1 K1 CO5
    the lock when it's released.
    (a) sleep()   (b) yield()   (c) notifyAll()   (d) join()

14. What are generic methods? 1 K1 CO5
    (a) Generic methods are the methods defined in a generic class
    (b) Generic methods are the methods that extend generic class Methods
    (c) Generic methods are methods that introduce their own type parameters
    (d) Generic methods are methods that take void parameters

15. Daemon threads run in 1 K1 CO5
    (a) Background   (b) Foreground   (c) Both Background and Foreground   (d) None

16. Choose the advantages of using generics? 1 K1 CO5
    (a) Generics facilitate type safety
    (b) Generics facilitate improved performance and reduced code
    (c) Generics promote the usage of parameterized types
    (d) All of the mentioned

17. Lambda expressions in java 8 are based on 1 K1 CO6
    (a) Procedural programming   (b) Functional programming
    (c) Data programming   (d) scripting

18. Select the component of RxJava that subscribes to Observable'sdata of sequence and 1 K1 CO6
    reacts per item of the observables.
    (a) Observer   (b) Observable   (c) Subscription   (d) Subject

19. Which keyword is used to define a method in Java that takes noparameters and returns no 1 K1 CO6
    value?
    (a) void   (b) null   (c) return   (d) static

20. The syntax below is used to create____.Stream< String>streamEmpty = Stream.empty(); 1 K1 CO6
    (a) Empty Stream   (b) Stream of Collection   (c) Stream of Array   (d) Stream of File

PART - B (10 × 2 = 20 Marks)
Answer ALL Questions

21.	Define objects and class.	2	K1	CO1
22.	Difference between JDK and JVM.	2	K2	CO1
23.	Show what methods are provided by the object class.	2	K1	CO2
24.	Does java support multiple inheritances? How?	2	K1	CO2
25.	What is the difference between a static and a non-static inner class?	2	K1	CO3
26.	List out the differences between String and StringBuffer.	2	K2	CO3

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **13125**

27. Define Exception.	2	K1 CO4
28. Difference between the Reader/writer class.	2	K2 CO4
29. Define synchronization? Give the purpose of synchronization?	2	K1 CO5
30. What is the purpose of Comparator Interface? Give an example.	2	K1 CO6

PART - C (6 × 10 = 60 Marks)
Answer ALL Questions

31. a) Write a Java Program to find the smallest number in the given array by creating one dimensional and two dimensional array examples. — 10 K2 CO1

OR

b) Explain the basic concepts of OOP with suitable example programs. — 10 K2 CO1

32. a) Write a Java program to create an abstract class Animal with abstract methods eat() and sleep(). Create subclasses Lion, Tiger, and Deer that extend the Animal class and implement the eat() and sleep() methods differently based on their specific behavior. — 10 K3 CO2

OR

b) Write a Java program using Packages to maintain the books details like book id, accession number, book name, author, publication in books package and keep the journal details such as journal id, journal name in journal package. In main class use these two packages and display the books and journal information as requested by the user. — 10 K3 CO2

33. a) Develop an Interest Interface which contains simple Interest and comp Interest methods and static final field of Rate25%.Write a class to implement those methods. — 10 K3 CO3

OR

b) How Strings are handled in Java? List out some methods of String class with appropriate example program. — 10 K3 CO3

34. a) Draw an exception hierarchy in java and explain with examples throwing and catching exceptions and common exceptions. — 10 K2 CO4

OR

b) Write a Java program to demonstrate how to read and write data to a file. — 10 K2 CO4

35. a) Infer a Java Program to explain the Inter-Thread Communication. — 10 K3 CO5

OR

b) Write a Java program to implement Bank Deposit and Withdrawal Application using Generic Class. — 10 K3 CO5

36. a) Write simple web applications using reactive programming. — 10 K2 CO6

OR

b) Define parallel processing? Write a java program for parallel processing using lambda expressions? — 10 K2 CO6

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **13125**