Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S3 (S,FE) (FT/WP) / S1 (PT) Examination November/December 2025 (2019 Scheme)

Course Code: CST205

Course Name: OBJECT ORIENTED PROGRAMMING USING JAVA

Max. Marks: 100 Duration: 3 Hours

PART A

Answer all questions. Each question carries 3 marks Marks

1	Explain the concept of class and object with 'Car' as a class.	(3)
2	Define the terms *abstraction* and *encapsulation.*	(3)
3	Illustrate, how object initialization is done by using *constructors.*	(3)
4	Why main method is declared as static in java? Discuss the possibilities of overriding and overloading of static methods.	(3)
5	Illustrate partial implementation of interfaces in java.	(3)
6	Can a *try* block exist without *catch or finally*? Discuss the possibilities.	(3)
7	Explain the working of Thread class methods *i) sleep() ii) join() iii)yield()*	(3)
8	Illustrate the difference between *length()* and *capacity()* method of StringBuffer.	(3)
9	Explain MVC architecture of swing.	(3)
10	List any *four* Layout Manager classes in swing.	(3)

PART B

Answer any one full question from each module. Each question carries 14 marks

Module 1

11a.	Differentiate between function oriented and object oriented software design approaches using a suitable example.	(8)
b.	Explain Lexical issues in Java with example.	(6)
12a.	Explain java buzzwords in detail.	(10)
b.	Explain program execution in java with a neat diagram.	(4)

Module 2

13a.	Create an abstract class Figure with a sigle abstract method double area() and two instance variables dim1 and dim2. Two classes Rectangle and Triangle extends from the abstract class. Create a main class Area and print the rectangl's and triangl's area using the concept of run time polymorphism.	(7)

b. When a class hierarchy is created (multi-level), in what order the constructors for the classes that makeup the hierarchy called? Explain with an example program. Also mention any two uses of super keyword. (7)

14a. Explain different types of operators along with special operators in java. (10)

b. List and explain different types of variables in java with example. (4)

Module 3

15a. Write a program to read lines of text upto 100 lines or until you enter the string *"quit"*, store each line of text in an array using *BufferedReader*, at the same time write the text into a file named *"data.txt"*. After write operation display the array contents to console in reverse order (ie., just reversing the array). Handle all file related exceptions. (7)

b. Explain with an example how user defined exceptions (custom exceptions) are handled in java. (7)

16a. Create a package named m*aths*. Define class *MathsOperations* with static methods to find the maximum and minimum of three numbers. Create another package s*tats*. Define class *StatsOperations* with methods to find the average and sum of three numbers. Use these methods in main to perform operations on three integers. (10)

b. Differentiate checked and unchecked exceptions. Write *two* examples for each type. (4)

Module 4

17a. Suppose your input string is "Java-is:a-high:level-class:based-object:oriented-programming:language". Write a program to separate only the words in the given string as tokens, also print how many tokens are seperated from the above string using StringTokenizer class. (6)

b. Differentiate String and StringBuffer class. Write a program to illustrate the working of any two methods in both classes. (8)

18a. Differentiate between Collection Interface and Collections Class. (4)

b. Describe in detail the creation of a thread using the Runnable interface and the Thread class with suitable examples. (10)

Module 5

19a. Create a JFrame which contains a TextArea for typing some text and a JLabel to display the appropriate messages while handling all the Key events. (7)

b. Explain step-by-step procedure of using Java Data Base Connectivity in Java (7)

programs.

20a. Write a java program to insert details of 'n' students into student table with fields rollno and name in the database 'test'. Details should be read from the console. (Assume table student is already exist in database test, you just insert the details.) (9)

b. Write a program to illustrate the use of JFrame, JTextField, JLabel and JButton. (5)

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