

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S3 (S,FE) (FT/WP/SIPT) Examinations May/June 2026 (2019 Scheme)



Course Code: CST205

Course Name: OBJECT ORIENTED PROGRAMMING USING JAVA

Max. Marks: 100

Duration: 3 Hours

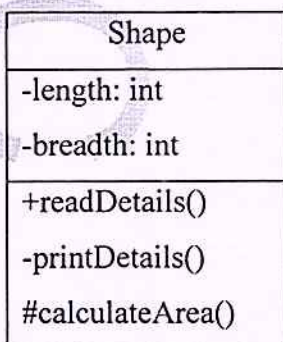
PART A

Answer all questions. Each question carries 3 marks

Marks

- 1 Represent the following class diagram as a Java class:

(3)



- 2 Write a note on Java Virtual Machine.

(3)

- 3 Explain the significance of the following keywords: this, super and final.

(3)

- 4 Is it possible to create an object for class A using, A ob = new A(); if the class contains only parameterized constructor? Why?

(3)

- 5 'Java supports abstraction'. Justify the statement.

(3)

- 6 Write a Java program to read characters from the console using BufferedReader class.

(3)

- 7 What are the advantages of multi-threading in Java?

(3)

- 8 Compare String and StringBuffer class in Java.

(3)

- 9 What are the features of Swing API?

(3)

- 10 Explain any three components available in Swing API.

(3)

PART B

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

Module 1

- 11 a) Identify the significance of a use-case diagram. Depict an ATM transaction with the help of a use-case diagram. (8)
- b) Discuss any three basic object-oriented concepts in Java with examples. (6)
- 12 a) Describe buzzwords of Java that define the Java programming language. (8)

- b) Represent the following entities using UML class diagrams: (6)
- (i) Book
 - (ii) Employee
 - (iii) Vehicle

Module 2

- 13 a) Write a Java program to implement a menu-driven calculator with options to perform addition, subtraction, multiplication, and division operations. (8)
- b) Explain different control statements in Java. Give examples. (6)
- 14 a) Write a Java program to implement a class Bank_Account with the following details: (8)
- a. Instance variables
 - (i) Account number
 - (ii) Customer name
 - (iii) Balance
 - b. Methods
 - (i) Open a new account
 - (ii) Deposit cash
 - (iii) Withdraw cash
 - (iv) Check balance

Illustrate how objects are created and methods are invoked.

- b) How Java supports inheritance. Explain with examples. (6)

Module 3

- 15 a) What is an exception? How is it handled in Java? (6)
- b) Write a Java program to copy the contents of one file to another file. (8)
- 16 a) Define two user-defined exceptions 'EvenException' and 'OddException'. (10)
- Write a Java program that accepts a number from the user and checks whether it is even or not. The method throws 'EvenException' or 'OddException' if the number is even or odd respectively.
- b) Discuss any two stream classes used in Java. (4)

Module 4

- 17 a) Write a Java Program to create two Threads, MultiTwo and MultiThree. (8)
- MultiTwo displays first 10 multiples of 2, while MultiThree displays first 10 multiples of 3 (Use method synchronization).

- b) Describe briefly the different methods of String class along with their syntax. (6)
- 18 a) With sample code, explain the different ways of creating threads in Java. (8)
- b) Explain the delegation event model with examples. (6)

Module 5

- 19 a) Write a Java program using Swing to create a frame having three text fields, three labels, and a button. The graphical user interface has to accept a number in the first text field. While clicking the button, the second and the third text fields have to display the square and the cube of the number respectively. (9)
- b) Explain the Swing architecture. (5)
- 20 a) Explain the steps involved in connecting a Java program to a database, executing a select query, and fetching the results with sample code. (8)
- b) Write a Java swing-based program to display a GUI to accept username and password from the user. The GUI should contain the required UI elements and should have appropriate event handling aspects. (6)
