

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

Third Semester

Biomedical Engineering

CS3391 - Object Oriented Programming

(Common to Computer Science and Engineering & Information Technology)

Regulations - 2021

Duration : 3 Hrs

Maximum: 100 Marks

PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

Q.No	Questions	BLT	CO	Marks
1.	List the features of object oriented programming.	UN	1	2
2.	Specify the scope of access control modifier in java.	RE	1	2
3.	Compare abstract method with final method.	UN	2	2
4.	State the purpose of package and give its syntax.	UN	2	2
5.	Give an example for "finally" in exception handling.	RE	3	2
6.	Identify the methods that are used to set and get the priorities of a thread.	UN	3	2
7.	Write the general form for generic constructor.	RE	4	2
8.	Write a java program to check the equality of the given two strings.	UN	4	2
9.	Give syntax to add and remove event handler.	RE	5	2
10.	Enlist various layout panes used in any JavaFX application.	RE	5	2

PART - B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

Q.No	Questions	BLT	CO	Marks
11.	a i Write a program that takes the user's height and weight as input and calculates their body mass index (BMI). [BMI = Weight (kg) / Height (m) ²]. Use conditional statements to categorize the BMI into different weight categories (underweight, normal weight, overweight, obese) and display the result.	AP	1	7
	ii Write a java program that compares two characters using the relational operators and displays whether they are equal or not.	AP	1	6
	Or			
	b Develop a Student class with data members and member functions for the student using default and parameterized constructor and display the details.	AP	1	13
12.	a Create a base class called BankAccount with fields for account number and balance. Create two subclasses: Savings Account and CheckingAccount. The SavingsAccount should have an additional field for interest rate, and the CheckingAccount should have an overdraft limit.	CR	2	13

Write a program that demonstrates inheritance by creating instances of both SavingsAccount and CheckingAccount objects and performing common banking operations like depositing, withdrawing, and checking balances. Use Constructor and super() for initializing values.

Or

	b	Create a library interface which has drawbook(), returnbook(), checkstatus() and reservebook() methods. Implement interface in the class and provide the code for all the methods.	CR	2	13
13.	a i	Demonstrate multiple catch statement for handling “divide by zero” and “array index out of bound” exception.	UN	3	6
	ii	Construct a User defined exception in java if the person age is greater than or equal to eighteen, they can vote or else throw “Not eligible for Voting” and display their exact age.	UN	3	7
		Or			
	b	Implement producer-consumer problem using the concept of inter thread communication.	UN	3	13
14.	a	Write a java program to read the content from one file and write the content into another file using byte stream and character stream classes.	AP	4	13
		Or			
	b	Develop a Java application using generic interface to implement stack operations.	AP	4	13
15.	a	Design a website to obtain personal information of a person which uses Checkbox, RadioButtons, ListView, ChoiceBox, Text Controls, ScrollPane using JavaFX Control.	CR	5	13
		Or			
	b	Create a simple notepad using JavaFX application to display menu, menubar and menuitems.	CR	5	13

*PART – C (Marks 1*15 = 15)*

<i>Q.No</i>		<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
16.	a	Create an abstract class shape with length, width, radius, and 3 sides as data members and two abstract methods to calculate area and perimeter. Create constructors and getter setters. Create four classes square, rectangle, circle, and triangle. Extend all the classes from shape directly. Complete the abstract method to calculate the area and perimeter in the derived classes. Write a program to demonstrate by getting a suitable value from the user to calculate the area and perimeter of different shapes.	AN	2	15
		Or			
	b	Display 5 th and 10 th multiplication table using multithreading concept. Explain the procedure with and without synchronized keyword.	AN	3	15