

Reg.No.:

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VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 50049

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – JAN. / FEB. 2025

Second Semester

Computer Science and Engineering

U23CS204 – OBJECT ORIENTED PROGRAMMING

(Common to Information Technology and Computer Science and Technology)

(Regulation 2023)

Time: Three Hours

Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
		K2 – Understanding	K4 – Analyzing

PART – A

Q.No.	Questions	(10 x 2 = 20 Marks)		
		Marks	KL	CO
1.	Define class and object with an example.	2	K1	CO1
2.	Give the syntax of constructor and destructor.	2	K2	CO1
3.	Differentiate object oriented programming and procedure oriented programming.	2	K2	CO2
4.	Infer the concept of function overloading.	2	K2	CO2
5.	When a class must be declared as abstract?	2	K2	CO3
6.	Outline the use of extends keyword in Java with syntax.	2	K2	CO3
7.	How character streams are defined?	2	K1	CO4
8.	List the two ways to create a thread in Java.	2	K1	CO4
9.	Write the two methods used in java.util. EventObject.	2	K1	CO5
10.	Draw the class hierarchy for Panel and Frame.	2	K2	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.	Questions	Marks	KL	CO
11. a)	As a developer create a snippet to support EB office to generate electricity bill with the following details. Create a class with the following members: Consumer no, consumer name, previous month reading, current month reading, type of EB connection (ie., domestic or commercial). If the type of the EB connection is domestic, calculate the amount to be paid as follows: i. First100 units- Rs.1 per unit ii. 101-200units-Rs. 2.50 per unit iii. 201-500 units - Rs. 4 perunit iv. .> 501 units -Rs. 6 per unit	13	K3	CO1
	(OR)			
b)	i. Explain OOPS and its features. ii. Explain the characteristics of constructor and destructor with example.	6 7	K2	CO1
12. a)	Explain the concept of inheritance in Java and highlight its key features and benefits. Provide examples to illustrate your explanation.	13	K2	CO2
	(OR)			
b)	A school requires to calculate the grade for their students. Write a java program which asks user to input percentage to display the grade using the following criteria. Use Switch statement to implement the following: Percentage >= 95 % and < 100 % : Grade A+ Percentage >= 90 % and < 95 % : Grade A Percentage >= 85 % and < 90 % : Grade B+ Percentage >= 80 % and < 85 % : Grade B Percentage >= 70 % and < 80 % : Grade C+ Percentage >= 60 % and < 70 % : Grade C Percentage >= 40 % and < 60 % : Grade D Percentage < 40 % : Grade F	13	K3	CO2
13. a)	You are given a piece of Java code. You have to complete the code by writing down the handlers for exceptions thrown by the code. The exceptions the code may throw along with the handler message are listed below: Division by zero: Print "Invalid division". String parsed to a numeric variable: Print "Format mismatch". Accessing an invalid index in string : Print "Index is invalid". Accessing an invalid index in array : Print "Array index is invalid.	13	K3	CO3

(OR)

- b) Using Scanner class, write a program to accept a sentence and display only 'Palindrome' words. A word is said to be palindrome, if it appears to be the same after reversing its characters. 13 K3 CO3
14. a) Construct a Java program to perform the following tasks using three different threads. Each thread will be responsible for its own task only. Among these three threads one will find the average number of the input numbers, one will be responsible for finding the Maximum number from the input array of numbers, and one will be responsible for finding the Minimum number from the input array of numbers. 13 K3 CO4
- (OR)
- b) Explain the concept of Input/Output basics in Java. Write the significance of I/O operations in programming and briefly discuss about reading and writing console input and output. 13 K2 CO4
15. a) A bank has approached a software engineer to develop an application with the details as customer name, mobile number, email in the text field. Set a menu bar with savings account and fixed deposit account. Menu must have link for providing the required amount and period of time the final amount with the total interest amount must be settled by the user. Finally display menu to view the details by the customer. 13 K4 CO5
- (OR)
- b) Code a java program to implement the following: Create four check boxes. The initial state of the first box should be in checked state. The status of each check box should be displayed. When we change the state of a check box, the status should be updated and displayed.. 13 K3 CO5

PART – C

Q.No.	Questions	(1 x 15 = 15Marks)		
		Marks	KL	CO
16. a)	In an online competitive exam, a set of 'N' number of questions are based on true or false. If other than true or false are entered, answer will not be accepted and the question will be repeated until either true or false is entered for that question. Using scanner class accept the no. of questions to be asked. Accept the answer for each question, and print the frequency of true and false using Printwriter class.	15	K2	CO2

(OR)

- b) Develop an application for a hotel such that when the cashier enters the item name in the text field, price should be displayed in another text field and finally total amount to display in total text field. Give minimum five text fields to get the item name to display the price and total textfield to calculate including cgst 2.5% sgst 2.5% for the total value. 15 K4 CO5