PVP23

Code No: 23CS3302/23IT3302/23AM3302/23DS3302

PVP SIDDHARTHA INSTITUTE OF TECHNOLOGY

(Autonomous)

OBJECT ORIENTED PROGRAMMING THROUGH JAVA

(Common to CSE, IT, CSE (AI&ML), CSE (Data Science))

Duration: 3 Hours **Max. Marks: 70**

Note: 1. This question paper contains two Parts A and B.
2. Part-A contains 10 short answer questions. Each Question carries 2 Marks.
3. Part-B contains 5 essay questions with an internal choice from each unit. Each question carries 10 marks.
4. All parts of the Question paper must be answered in one place.

BL – Bloom's Level CO – Course Outcome

PART-A **10 x 2 = 20 Marks**

		BL	CO
1 a)	What methods of the Scanner class are used to read an integer and string input from the user? Explain with examples.	L2	CO1
1 b)	Explain the precedence and associativity of arithmetic operators in Java. Evaluate the expression " 100 / 10 * 2 + 5 - 3 % 2"and determine the result.	L2	CO1
1 c)	Explain the term object. Write a simple Java program that declares a class "Book" with attributes "title" and "author". Create two Book objects and demonstrate how to assign the values of one Book object to another and print their attributes.	L3	CO2
1 d)	Explain how the "charAt" method works in the String class. Provide a simple example.	L3	CO2
1 e)	Demonstrate about multidimensional arrays in java.	L2	CO2
1 f)	Explain about final keyword.	L3	CO2

1 g)	Differentiate throw and throws in exception handling.	L2	CO1
1 h)	What is the use of CLASSPATH in Java?	L2	CO1
1 i)	Distinguish between a thread and a process?	L4	CO4
1 j)	Construct a Java method to Find the element exists or not in a HashSet.	L3	CO4

PART –B

5 x 10 = 50 Marks

			BL	CO	Max. Marks
UNIT-I					
2	(a)	Explain the structure of a basic Java program, including the purpose of the main method and the importance of class definitions. Discuss how comments and escape sequences contribute to program readability and functionality.	L2	CO1	5 M
	(b)	Discuss how conditional statements are used in the program to determine the tax amount. Write a Java program to calculate the tax on a salary. The program should prompt the user to enter their annual salary. Use the following tax brackets: No tax for salaries up to 2,50,000 rupees, 5% tax for salaries between 2,50,001 and 5,00,000 rupees, and 10% tax for salaries above 5,00,000 rupees. Display the tax amount based on the entered salary.	L2	CO1	5 M
OR					
3	(a)	What are java buzzwords? Give a brief description.	L2	CO1	5 M
	(b)	Explain about Command line arguments. Write a java program to accept student marks as command line arguments and calculate the sum, percentage and grade of student.	L2	CO1	5 M
UNIT-II					

4	(a)	Create a Java program that reads a string from the user and performs the following operations: find the length of the string, convert it to uppercase, and search for a specific substring. Use String methods to accomplish these tasks and print the results.	L3	CO2	5 M
	(b)	What is constructor overloading? Write a java program to demonstrate constructor overloading	L3	CO2	5 M
OR					
5	(a)	Explain the role of the "this" keyword in Java. How does it help in accessing instance variables and methods? Write a java program to demonstrate "this" keyword.	L3	CO2	5 M
	(b)	What is recursion? How does a recursive method work, and what are the key considerations when implementing recursive methods? Write a Java method to compute the Fibonacci sequence using recursion	L3	CO2	5 M
UNIT-III					
6	(a)	Develop a program to perform matrix addition.	L3	CO2	5 M
	(b)	Explain with an example how multiple inheritance is achieved in java.	L3	CO2	5 M
OR					
7	(a)	Develop a program to perform matrix multiplication.	L3	CO2	5 M
	(b)	Explain the concept of extending an interface?	L3	CO2	5 M
UNIT-IV					
8	(a)	Explain the behavior of different access specifiers in packages.	L3	CO3	5 M
	(b)	Write a java program to handle multiple exceptions like Division by zero and Number Formatted Exception.	L3	CO3	5 M
OR					

9	(a)	Write a Java program by defining, creating and accessing a package.	L3	CO3	5 M
	(b)	Write a program that reads integers from the user using Scanner and calculates their sum.	L3	CO3	5 M
UNIT-V					
10	(a)	Analyze different ways of implementing a thread?	L4	CO4	5M
	(b)	Construct a Java program to create a multithreading using runnable interface	L3	CO4	5M
OR					
11	(a)	Develop a program in java to get the values present in a HashSet	L3	CO4	5M
	(b)	Examine how to insert and delete elements into an existing queue? Discuss.	L3	CO4	5M

Course Coordinators:

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