

**DIT UNIVERSITY , DEHRADUN****B.TECH (CSE) : END TERM EXAMINATION, ODD SEM 2022-23 (SEM III)**

Roll No.

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**Subject Name : Introduction to Java Programming****Time: 3 Hours****Total Marks: 100****Note: All questions are compulsory. No student is allowed to leave the examination hall before the completion of the exam.**

<b>Q.1)</b>	<b>Attempt all Parts :</b>	<b>BTL</b>	<b>CO</b>
	(a) What is JVM? Give importance of JVM in java language.	1	1
	(b) What is importance of super and this keyword in inheritance? Illustrate with suitable example.	2	4
	(c) Define a class with name Student with suitable data members. Create two objects using two different constructors of the class.	3	4
	(d) What is the difference between an interface and an abstract class? Explain with an example.	3	4
	<b>[4 x 5= 20]</b>		
<b>Q.2)</b>	<b>Attempt all Parts :</b>	<b>BTL</b>	<b>CO</b>
	(a) Explain various access specifiers supported by Java with an example.	2	1
	(b) Write a step to declare and define two and three dimensional arrays of a class.	1	2
	(c) Write short note on the following Object Oriented concepts: i) Encapsulation ii) Polymorphism	2	4
	(d) Why Java Strings are Immutable? Justify.	2	4
	<b>[4 x 5= 20]</b>		
<b>Q.3)</b>	<b>Attempt any two parts :</b>	<b>BTL</b>	<b>CO</b>
	(a) Write a program to define a class with name Employee with members as id and salary. Accept data for five employees and display details of employee getting highest salary.	4	4
	(b) Write differences between the following: a. Method overloading and Method overriding. b. Throw and Throws. c. checked and unchecked exceptions.	3	5
	(c) Write a program in java to search a given number in an array.	3	2
	<b>[2 x 10= 20]</b>		
<b>Q.4)</b>	<b>Attempt any two parts :</b>	<b>BTL</b>	<b>CO</b>
	(a) Write a program to perform the following concept using classes, objects, constructors: i) Read 5 subject's marks of 5 students ii) Calculate the total marks obtained by each students and print the result on the screen.	4	4
	(b) Write a Java program to find the area and perimeter of square and circle using interface.	4	5
	(c) Write a java program to create own exception for Negative Value Exception if the user enter negative value.	4	5

			[2 x 10= 20]		
<b>Q.5)</b>	<b>Attempt any two parts :</b>			<b>BTL</b>	<b>CO</b>
	(a)	What is an exception? Explain the class hierarchy of exceptions. Discuss the use of try, catch and finally blocks. Can we have more than one catch blocks with one try block?	3	5	
	(b)	What is the multiple inheritance? Write a java program to implement multiple inheritance.	3	4	
	(c)	Write a java program to display all the odd numbers between 1 to 30 using for loop & if statement.	3	3	
			[2 x 10= 20]		
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