QUESTION PAPER - ASSIGNMENT AND TUTORIAL

ASSIGNMENT

ASSIGNMENT	1			
Subject name with code	221TCE008 STRUCTURAL DYNAMICS	Academic Year / Semester		2022- 23/01
		Branch		COMPUTER AIDED STRUCTURAL ENGG
Date of Issue	14/11/2022	Date of submission		

Q.No	QUESTIONS	Marks	CO	Level
1	A vibrating system consist of a mass 5kg, spring of stiffness 120N/m and a damper with a damping co-eff of 5 N.s/m. Determine. a) Damping factor b) Natural frequency & damped frequency c) Logarithmic decrement d) Ratio of 2 successive amplitudes e) No. of cycles after which the initial amplitude is reduced to 25%	10	1	3

CO - Course Outcome [CO]

CO 1: Model and analyse single-degree of freedom systems subjected to free vibration

LEVEL - Bloom's Taxonomy Level

Level 1: Remember
Level 2: Understand
Level 3: Apply

HOD

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ASSIGNMENT	1		
Subject name with code	221TCE008 STRUCTURAL DYNAMICS	Academic Year / Semester	2022-23/01
		Branch	Computer aided Structural Engg
Date of Issue	14/11/22	Date of submission	28/11/22

ANSWER SCHEME

Q.No		Marks
1.	Damping factor = 0.102.	2
	Natural frequency = 4.9 rad/sec	1
	Damped natural frequency = 4.87 rad/sec	1
	Logarithmic decrement = 0.64	2
	Ratio between 2 consecutive amplitudes $\frac{x_1}{x_2}$ = 1.896	2
	No. of cycles after 25% reduction = 2.166 ≈ 3 cycles	2

HOD

ASSIGNMENT	2		Academic Year / Semester	2022-23/01
Subject name with code	221TCE008 STRUCTURAL DYNAMICS		Branch	COMPUTER AIDED STRUCTURAL ENGINEERING
Date of Issue	9|12|2022		Date of submission	

Q.No	QUESTIONS	Marks	CO	Level
1	Explain different types of Vibration isolation in detail.	10	2	2

CO - Course Outcome [CO]

CO2: Analyse SDOF systems subjected to different dynamic forces and understand the concept of vibration isolation

LEVEL - Bloom's Taxonomy Level

Level 1: Remember

Level 2: Understand

Level 3: Apply

HOD

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

ASSIGNMENT	2		Academic Year / Semester	22-23/Mtech-S1
Subject name with code	Structural dynamics 221TCE0008		Branch	CAS- M.tech
Date of Issue	9|12|22		Date of submission	16|12|22

ANSWER SCHEME

Q.No		Marks
1.	Vibration isolation – General	— 2
	Passive isolation (Explanation, methods, significance)	— 4
	Active isolation (Explanation, methods, significance)	— 4

2\|12\|22

HOD

ASSIGNMENT	3		Academic Year / Semester	22-23 / 01
Subject name with code	STRUCTURAL DYNAMICS 221TCE008		Branch	Mtech CAS
Date of Issue	4/01/23		Date of submission	11/01/23

Q.No	QUESTIONS	Marks	CO	Level
1	Determine the natural frequencies & mode-shapes for the shear building $m = 1$ $\rightarrow x_1$ $k_1 = 600\ KN/m$ $m = 1.5$ $\rightarrow x_2$ $k_2 = 1200\ KN/m$ $m = 2$ $\rightarrow x_3$ $K_3 = 1800\ KN/m$	10	3	3

CO - Course Outcome [CO]
CO 3: Perform dynamic analysis of MDOF systems

LEVEL - Bloom's Taxonomy Level
Level 1: Remember
Level 2: Understand
Level 3: Apply

HOD

ASSIGNMENT	3		Academic Year / Semester	22-23/01
Subject name with code	STRUCTURAL DYNAMICS 221TCE008		Branch	Mtech CAS
Date of Issue	4/01/23		Date of submission	11/01/23

ANSWER SCHEME

Q.No		Marks
1	Mass matrix	— 1
	Stiffness matrix	— 2
	Characteristic equation	
	Natural frequencies	
	$\omega_1 = 14.5$ rad/s	— 4
	$\omega_2 = 31.1$ rad/s	
	$\omega_3 = 46.1$ rad/s	
	Modes	
	(1) $\begin{Bmatrix} 1 \\ 0.644 \\ 0.3 \end{Bmatrix}$ (2) $\begin{Bmatrix} 1 \\ -0.601 \\ -0.676 \end{Bmatrix}$ (3) $\begin{Bmatrix} 1 \\ -2.57 \\ 2.47 \end{Bmatrix}$	— 3

48/01/23

HOD

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Assignment no.	4	Academic Year / Semester	2022-23. / 01.
Subject name with code	STRUCTURAL DYNAMICS 221TCE008	Branch	M·TECH CAS
Date of Issue	18\01\23	Date of submission	25\01\23

Q.No	QUESTIONS	Marks	CO	Level
1	Find the damped vibration response of the 2-Storey shear building due to harmonic excitation $\{P(t)\} = \{\begin{smallmatrix} P_0 \\ 0 \end{smallmatrix}\} \sin \bar{\omega} t$ & $c = \sqrt{\frac{km}{200}}$	10	4	3

CO - Course Outcome [CO]

CO 4 : Perform the analysis of MDOF systems subjected to forced vibration

LEVEL - Bloom's Taxonomy Level

Level 1 : Remember

Level 2 : Understand

Level 3 : Apply

HOD

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Assignment no.	4	Academic Year / Semester	2022-23 /01
Subject name with code	STRUCTURAL DYNAMICS 221TCE008	Branch	M. TECH CAS
Date of Issue	18/01/23	Date of submission	25/01/23

ANSWER SCHEME

Q.No		Marks
1	Equation of motion & $[M]$, $[K]$, $[C]$, matrices	1
	Solving the characteristic equation and finding the values of natural frequencies & mode shapes $\omega_1 = \sqrt{\frac{k}{2m}}$ $\omega_2 = \sqrt{\frac{2k}{m}}$ $\{\phi_1\} = \left\{\begin{array}{c} 0.5 \\ 1 \end{array}\right\}$ $\{\phi_2\} = \left\{\begin{array}{c} -1 \\ 1 \end{array}\right\}$	3
	Formation of uncoupled matrices $[M^*]$, $[K^*]$, $[C^*]$, $\{P^*\}$	3
	Calculation of generalised coordinates $q(t)$	2
	Calculation of iDisplacement response $x(t) = \Sigma \{\phi\} q(t)$	1

18/01/23

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Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
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& TECHNOLOGY

Assignment no.	5	Academic Year / Semester	2022-23 M TECH S1.
Subject name with code	STRUCTURAL DYNAMICS 221TCE 008	Branch	M TECH CAS
Date of Issue	02|02|23	Date of submission	09|02|23

Q.No	QUESTIONS	Marks	CO	Level
1	Form the differential equation for axial vibration of rods	10.	5	2.

CO - Course Outcome [CO]

CO 5 : Perform the dynamic analysis of distributed parameter systems

LEVEL - Bloom's Taxonomy Level

Level 1 : Remember

Level 2 : Understand

Level 3 : Apply

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
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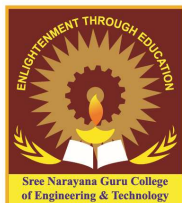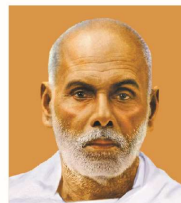| Assignment no.	5	Academic Year / Semester	2022-23/ 01
Subject name with code	STRUCTURAL DYNAMICS 221TCE008	Branch	M·TECH CAS·
Date of Issue	02|02|23	Date of submission	09|02|23

ANSWER SCHEME

Q.No		Marks
1	Free body diagram —— 3 Stress-strain ~ axial force relations. └—3 Differential eqn of motion from the free body diagram. └—3 General solution └—1	10

02\|02\|2023

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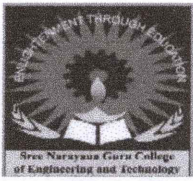
TUTORIAL

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PAYYANNUR, KANNUR

Tutorial	1	Academic Year / Semester	2022-23/5
Subject name with code	CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA	Branch	CSE
Date of Issue	14/09/2022	Date of submission	29/09/2022

| Q.No	QUESTIONS	Mark	CO	Level
1.	Illustrate the following java program: 1. Check the given number is prime or not 2. Check the given number is odd or even 3. Check the given string is palindrome or not 4. Print Fibonacci series 5. Matrix Addition 6. Sum of elements in an array. 7. Print a pyramid series	35	I	2

CO - Course Outcome [CO]

CO 1: Implement programs in Java which use data types, operators, control statements, built in packages & interfaces, Input/output streams and Files.

LEVEL - Bloom's Taxonomy Level

Level 2: Understanding
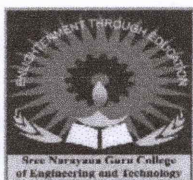
ANSWER KEY/VALUATION SCHEME

Tutorial	1 (SCHEME)	Academic Year / Semester	**2022-23/5**
Subject name with code	**CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA**	Branch	**CSE**
Date of Issue	14/09/2022	Date of submission	29/09/2022

Q.No	QUESTIONS	Mark	CO	Level

1.	Illustrate the following java program:
	   1. Check the given number is prime or not
	   2. Check the given number is odd or even
	   3. Check the given string is palindrome or not
	   4. Print Fibonacci series
	   5. Matrix Addition
	   6. Sum of elements in an array.
	   7. Print a pyramid series
	
	Each programs – 5 marks
		35	I	2

CO - Course Outcome [CO]

CO 1: Implement programs in Java which use data types, operators, control statements, built in packages & interfaces, Input/output streams and Files.

LEVEL - Bloom's Taxonomy Level

Level 2: Understanding

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PAYYANNUR, KANNUR

Tutorial	2	Academic Year / Semester	2022-23/5
Subject name with code	CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA	Branch	CSE
Date of Issue	1/10/2022	Date of submission	10/10/2022

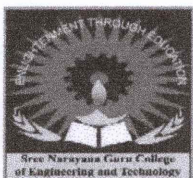| Q.No	QUESTIONS	Mark	CO	Level
1.	Illustrate the following UML diagram: 1. Use case for Movie Reservation System. 2. Use case for Online Music Player System. 3. Class diagram for a Library Management System. 4. Class diagram for Online Movie Ticket Booking. 5. Activity diagram for Food Ordering System.	25	I	2

<u>CO - Course Outcome [CO]</u>

CO 1: Implement programs in Java which use data types, operators, control statements, built in packages & interfaces, Input/output streams and Files.

<u>LEVEL - Bloom's Taxonomy Level</u>

Level 2: Understanding

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

Tutorial	2 (SCHEME)	Academic Year / Semester	2022-23/5
Subject name with code	CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA	Branch	CSE
Date of Issue	1/10/2022	Date of submission	10/10/2022

| Q.No	QUESTIONS	Mark	CO	Level

1.	Illustrate the following UML diagram:
	   1. Use case for Movie Reservation System.
	   2. Use case for Online Music Player System.
	   3. Class diagram for a Library Management System.
	   4. Class diagram for Online Movie Ticket Booking.
	   5. Activity diagram for Food Ordering System.
	
	Diagram- 5 marks each
		25	I	2

CO - Course Outcome [CO]

CO 1: Implement programs in Java which use data types, operators, control statements, built in packages & interfaces, Input/output streams and Files.

LEVEL - Bloom's Taxonomy Level

Level 2: Understanding
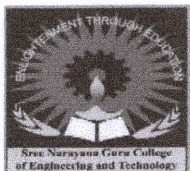
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Tutorial	3	Academic Year / Semester	2022-23/ 3
Subject name with code	CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA	Branch	CSE
Date of Issue	07/10/2022	Date of submission	14/10/2022

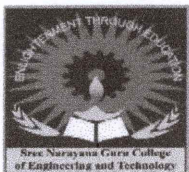| Q.No	QUESTIONS	Mark	CO	Level
1.	Demonstrate the following control statements in Java: i. Decision Making /Selection Statements ii. Looping Statements iii. Jump Statements	10	2	2

CO - Course Outcome [CO]

CO 2 : To get thorough knowledge of java languages and to utilize the features of java like datatypes, operators, control statements etc and how to use the object oriented concepts - classes, objects ,constructors, data hiding, inheritance and polymorphism.

LEVEL - Bloom's Taxonomy Level

Level 2: Understanding

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
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Answer key /Valuation Scheme

Tutorial	3(Scheme)	Academic Year / Semester	2022-23/ 3
Subject name with code	CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA	Branch	CSE
Date of Issue	07/10/2022	Date of submission	14/10/2022

| Q.No	QUESTIONS	Mark	CO	Level
1.	Demonstrate the following control statements in Java: i. Decision Making /Selection Statements ii. Looping Statements iii. Jump Statements **Syntax and Flowchart – 5 marks for each , Programming Example – 5 marks for each**	30	2	2

CO - Course Outcome [CO]

CO 2 : To get thorough knowledge of java languages and to utilize the features of java like datatypes, operators, control statements etc and how to use the object oriented concepts - classes, objects ,constructors, data hiding, inheritance and polymorphism.

LEVEL - Bloom's Taxonomy Level

Level 2: Understanding

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PRINCIPAL
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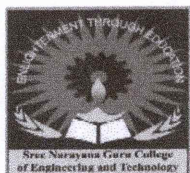
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Tutorial	4	Academic Year / Semester	2022-23/ 3
Subject name with code	CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA	Branch	CSE
Date of Issue	17/10/2022	Date of submission	25/10/2022

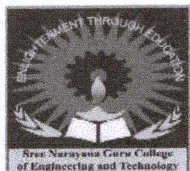| Q.No	QUESTIONS	Mark	CO	Level
1.	Contrast the difference between Method overloading and Method Overriding.	5	2	2
2.	Define abstract class.	5	2	1
3.	Compare and contrast class and abstract class.	5	2	2

CO - Course Outcome [CO]

CO 2 : To get thorough knowledge of java languages and to utilize the features of java like datatypes, operators, control statements etc and how to use the object oriented concepts - classes, objects ,constructors, data hiding, inheritance and polymorphism.

LEVEL - Bloom's Taxonomy Level

Level 1: Remenmbering
Level 2: Understanding

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Answer Key/Valuation Scheme

Tutorial	4(Scheme)	Academic Year / Semester	2022-23/ 3
Subject name with code	CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA	Branch	CSE
Date of Issue	17/10/2022	Date of submission	25/10/2022

| Q.No	QUESTIONS	Mark	CO	Level
1.	Contrast the difference between Method overloading and Method Overriding. **Any 5 points – 5 marks**	5	2	2
2.	Define abstract class. **Definition -1 mark, Explanation – 4 marks**	5	2	1
3.	Compare and contrast class and abstract class. **Comparison – 5 marks**	5	2	2

CO - Course Outcome [CO]

CO 2 : To get thorough knowledge of java languages and to utilize the features of java like datatypes, operators, control statements etc and how to use the object oriented concepts - classes, objects ,constructors, data hiding, inheritance and polymorphism.

LEVEL - Bloom's Taxonomy Level

Level 1: Remenmbering
Level 2: Understanding

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PRINCIPAL
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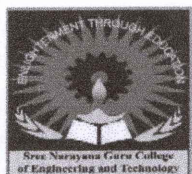
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Tutorial	5	Academic Year / Semester	2022-23/ 3
Subject name with code	**CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA**	Branch	**CSE**
Date of Issue	**31/10/2022**	Date of submission	**11/11/2022**

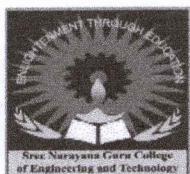| Q.No	QUESTIONS	Mark	CO	Level
1.	Develop a java package named primepackage, with a class Prime containing a static method that check whether a number is prime or not and returns that information. Import this package in another class and use to check a number is prime or not.	5	3	3
2.	Illustrate a java package named "even" package with a class Even containing a static method to check whether a given number is even or not.	5	3	2
3.	Contrast the difference between packages and interface.	5	3	2

CO - Course Outcome [CO]

CO 3: To understand the utilization of built in packages & interfaces and to illustrate how robust programs can be written in Java using exception handling mechanism , Input/ Output Streams and Files in Java to develop programs

LEVEL - Bloom's Taxonomy Level

Level 2: Understanding
Level 3: Applying

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

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Answer Key / Valuation Scheme

Tutorial	5(Scheme)	Academic Year / Semester	2022-23/ 3
Subject name with code	CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA	Branch	CSE
Date of Issue	31/10/2022	Date of submission	11/11/2022

Q.No	QUESTIONS	Mark	CO	Level
1.	Develop a java package named primepackage, with a class Prime containing a static method that check whether a number is prime or not and returns that information. Import this package in another class and use to check a number is prime or not. **Syntax and logic -2.5 mark , Program – 2.5 marks.**	5	3	3
2.	Illustrate a java package named "even" package with a class Even containing a static method to check whether a given number is even or not. **Syntax and logic -2.5 mark , Program – 2.5 marks.**	5	3	2
3.	Contrast the difference between packages and interface. **Any 5 points -5 marks.**	5	3	2

CO - Course Outcome [CO]

CO 3: To understand the utilization of built in packages & interfaces and to illustrate how robust programs can be written in Java using exception handling mechanism , Input/ Output Streams and Files in Java to develop programs

LEVEL - Bloom's Taxonomy Level

Level 2: Understanding
Level 3: Applying

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
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Tutorial	6	Academic Year / Semester	**2022-23/ 3**
Subject name with code	**CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA**	*Branch*	**CSE**
Date of Issue	**22/11/2022**	*Date of submission*	**30/11/2022**

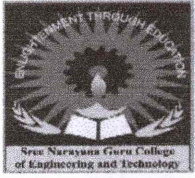| Q.No	QUESTIONS	Mark	CO	Level

1.	Explain in detail following file handling operations in java:
	  i. Create a file
	  ii. Get information of a file
	  iii. Read from a file
	  iv. Write to a file
	  v. Delete a file
		10	3	2

CO - Course Outcome [CO]

CO 3: To understand the utilization of built in packages & interfaces and to illustrate how robust programs can be written in Java using exception handling mechanism , Input/ Output Streams and Files in Java to develop programs

LEVEL - Bloom's Taxonomy Level

Level 2: Understanding

Valuation Key/ Answer Scheme

Tutorial	6(Scheme)	Academic Year / Semester	2022-23/ 3
Subject name with code	CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA	Branch	CSE
Date of Issue	22/11/2022	Date of submission	30/11/2022

Q.No	QUESTIONS	Mark	CO	Level

1.	Explain in detail following file handling operations in java:
	  i. Create a file
	  ii. Get information of a file
	  iii. Read from a file
	  iv. Write to a file
	  v. Delete a file
	
	Each operation with simple java program – 10 marks.
		10	3	2

CO - Course Outcome [CO]

CO 3: To understand the utilization of built in packages & interfaces and to illustrate how robust programs can be written in Java using exception handling mechanism , Input/ Output Streams and Files in Java to develop programs

LEVEL - Bloom's Taxonomy Level

Level 2: Understanding

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Tutorial	7	Academic Year / Semester	2022-23/ 3
Subject name with code	**CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA**	Branch	**CSE**
Date of Issue	**02/12/2022**	Date of submission	**15/12/2022**

Q.No	QUESTIONS	Mark	CO	Level
1.	Illustrate different event classes and event listener interface in java.	10	4	2

CO - Course Outcome [CO]

CO 4: To provide basic exposure for the application of programs in java using multithreading, string handling mechanisms, collection framework and event handling mechanisms.

LEVEL - Bloom's Taxonomy Level

Level 2: Understanding

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Valuation Key/ Answer Scheme

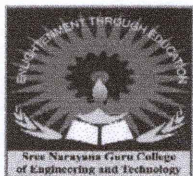| Tutorial	7(Scheme)	Academic Year / Semester	2022-23/ 3
Subject name with code	CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA	Branch	CSE
Date of Issue	02/12/2022	Date of submission	15/12/2022

Q.No	QUESTIONS	Mark	CO	Level
1.	Illustrate different event classes and event listener interface in java. **List out the event class and event listener interface- 2 marks, Explanation – 8 marks.**	10	4	2

CO - Course Outcome [CO]

CO 4: To provide basic exposure for the application of programs in java using multithreading, string handling mechanisms, collection framework and event handling mechanisms.

LEVEL - Bloom's Taxonomy Level

Level 2: Understanding

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
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Tutorial	8	Academic Year / Semester	2022-23/ 3
Subject name with code	CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA	Branch	CSE
Date of Issue	12/12/2022	Date of submission	21/12/2022

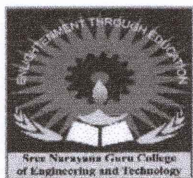| Q.No	QUESTIONS	Mark	CO	Level
1.	Explain in detail different Swing layout managers in Java swing.	10	5	2

CO - Course Outcome [CO]

CO 5: To impart the techniques of creating GUI based applications and database connectivity.

LEVEL - Bloom's Taxonomy Level

Level 2: Understanding

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Valuation Key/ Answer Scheme

Tutorial	8(Scheme)	Academic Year / Semester	2022-23/ 3
Subject name with code	CST 205 OBJECT ORIENTED PROGRAMMING USING JAVA	Branch	CSE
Date of Issue	12/12/2022	Date of submission	21/12/2022

Q.No	QUESTIONS	Mark	CO	Level
1.	Explain in detail different Swing layout managers in Java swing. **List out the Swing layout manager - 2 marks, Explanation with figures– 8 marks.**	10	5	2

CO - Course Outcome [CO]

CO 5: To impart the techniques of creating GUI based applications and database connectivity.

LEVEL - Bloom's Taxonomy Level

Level 2: Understanding

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR