DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Mid Semester Examination – March 2019

Course : B. Tech in CIVIL ENGINEERING **Semester : III**

Subject Name: Structural Mechanics- I **Subject Code: CV403**

Max Marks: 20 **Date: 13th March 2019**

Time: 3 pm to 4 pm **Duration: 1 Hour**

Instructions to the Students:

1. Assume suitable data wherever necessary and State it clearly.
2. Figures to Right Indicate full Marks.
3. L indicates Low Level, M indicates Medium Level & H indicates High Level.

	QUESTIONS	(Level/CO)	Marks
Q. 1	Attempt following Questions (Any 6)		6
	1. Define Indeterminate Structures.	CO 1, L	
	2. Explain Free Body Diagram.	CO 1, M	
	3. Define Strain energy.	CO 2, M	
	4. Write equation for strain energy stored due to Bending Moment.	CO 2, M	
	5. Write Deflection equation for simply supported beam carrying UDL over entire span.	CO 3, H	
	6. What is determinate structure?	CO 2, M	
	7 What are the Assumptions in Truss analysis?		
Q.2	**Solve Any TWO of the following.**		6
(A)	State and explain Castiglione's theorem I.	CO 1, M	
(B)	Deferentiate Determinate & Indeterminate Structures.	CO 2, M	
(C)	State and Explain Williot Mohr's Diagram.	CO1 , Low	
Q. 3	**Solve ANY ONE of the following.**		8
(A)	a) Derive the slope, deflection and curvature equation. b) Derive Maxwell's Reciprocal theorem.	CO 2, High	
(B)	A Beam AB of span 6 Mtr. Carries a point load of 45 KN at a distance of 4.0 Mtr. From the left end A. Find 1.Slope at A. 2 Deflection under the load. 3 Section Where Maximum Deflection occurs & it's Value. Take $E = 200$ KN/ MM^2 And $I = 8.225 \times 10^7$ MM^4	CO 3, Medium	
	***** End *****		