

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE Mid Semester Examination – March 2019 Course : B. Tech in CIVIL ENGINEERING Subject Name: Structural Mechanics- I Max Marks: 20 Time: 3 pm to 4 pm				Semester : III Subject Code: CV403 Date: 13th March 2019 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) Differentiate Determinate & Indeterminate Structures.				CO 2, M	
(C) State and Explain Williot Mohr's Diagram.				CO 1, Low	
Q.3 Solve ANY ONE of the following.					8
(A) a) Derive the slope, deflection and curvature equation.				CO 2, High	
b) Derive Maxwell's Reciprocal theorem.					
(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.				CO 3, Medium	
Take $E = 200 \text{ KN/MM}^2$ And $I = 8.325 \times 10^7 \text{ MM}^4$.					
*** End ***					