Roll Tota	No. Total No. of Pages	s:01
	M.Tech. (Structural Design) (2016 & Onwards) (Sem.–2) STABILITY OF STRUCTURES Subject Code : MTSD-202 M.Code : 74291 Date of Examination : 13-12-22	
Time	e: 3 Hrs. Max. Marks	: 100
 Attempt any FIVE questions out of EIGHT Questions. Each question carries TWENTY marks. 		
1.	Describe the Dynamic approach for column buckling with an example.	(20)
2.	Derive the higher order governing equation for stability of columns. Hence analy column with one end clamped and other hinged boundary condition.	yse the (20)
3.	Derive the expression for pure torsion of thin-walled bars of open cross section.	(20)
4.	a) Explain buckling of bars with varying in cross section with a suitable ex Derive the expression for buckling of a bar with varying in cross section.	ample. (14)
	b) Explain the application of trigonometric series in plane buckling of bars.	(6)
5.	a) With suitable sketches discuss the different modes of buckling of portal frames.	(10)
	b) Explain the equilibrium approach for the buckling analysis of beam column example.	ns with (10)
6.	Derive the governing moment equilibrium equation of buckling of a thin plate.	(20)
7.	Write down the effects of shearing force on the critical load and buckling of b columns.	uilt-up (20)
8.	Write short note on:	
	a) Bending of thin plates.	(10)
	b) Tangent and reduced modulus of concept.	(10)
NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any		

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.