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T 2 Examination – April 2019

M. Tech. 2nd Semester (Structural Engineering) and B Tech. 8th Semester (Civil Engineering)

Course Code: 12M1WCE214   Max. Marks: 25
Course Name: Theory of Plates and Shells
Course Credit: 03   Max. Time: 90 Minutes

Note: All questions are compulsory. Carrying of mobile phone during examination will be treated as case of unfair means. Assume any missing data. Draw clear sketch whereas required.

Q.1 Develop the governing differential equation for a thin circular plate experiencing vertical uniform loading and subject in cylindrical coordinate system.   8

Q.2 List the available theories for plate structures. Differentiate these from classical plate theory with graphical representation of internal stresses.   8

Q. 3 Write general expression for thick plate using three dimensional elasticity equations. Write boundary conditions for the same.   5

Q.4 Develop the differential equation for a membrane for Cartesian and circular coordinate system.   4