

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- Feb- 2020

B.Tech 8th Sem/M.Tech 2nd Sem

COURSE CODE: 12M1WCE214

MAX. MARKS: 15

COURSE NAME: THEORY OF PLATES AND SHELLS

COURSE CREDITS: 3

MAX. TIME: 1 Hr

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

Q1. Stating assumptions deduce the partial differential equation to find the deflection of a thin rectangular plate subjected to external load q per unit area. [5, CO1]

Q2. For a simply supported square plate of side "a" subjected to uniformly distributed load q_0 deduce an equation to find the maximum deflection of the plate using Navier's solution. [5, CO1]

Q3. Deduce an equation to show that the directions of maximum and minimum slopes are orthogonal in case of pure bending of plates. [5, CO2]