

Civil Engineering Department

Guru Nanak Dev Engineering College, Ludhiana

M.Tech 2nd year

CE-516 Finite Element Method (Elective III)

Date: Mon 29 Aug 11 1st House Test Time: 10:30 a.m. to 12:00 noon Max. Marks 24

Don't write anything on question paper except your Roll No. _____

- 1(a) Show general state of stress on a differential element, and write down equilibrium equations. 6
- 1(b) Which are the methods used to find approximate solution to various complex Engineering problems? 2
- 2(a) How one can calculate value of π from polygon inscribed and circumscribed in a circle? Show convergence of π for $n = 3, 4, 6$; where n is number of sides of polygon. 4
- 2(b) Write down advantages and disadvantages of Finite Element Method. 4
- 3 Derive element stiffness matrix for for 2D pin jointed truss element. Using it calculate Global Stiffness Matrix for 2 member truss. 8

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