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Ex/PG/CE/T/116A/2025

M.E. CIVIL ENGINEERING

FIRST YEAR, FIRST SEMESTER EXAMINATION, 2025

Theory of Plates and Shells

Answer the two parts in two separate answer scripts

Part II (40 marks)

Attempt any TWO questions. Each question carries 20 marks.

1. Deduce the A-B-B-D matrix for a laminated composite plate element following FSDT. [20]

2. How do we transform the on-axis stresses to off-axis stresses for any lamina of a laminated plate? Deduce the ρ matrix required to derive the mass matrix for a laminated plate finite element. [10+10]

3. Deduce the **[B] matrix** of an iso-parametric laminated composite plate element following FSDT. [20]