

No. of Printed Pages : 3

Roll No.

18AA1654

M.Tech. EXAMINATION, May 2019

(First Semester)

(C. Scheme) (Re-appear)

CE(SE)

CES521C

Theory of Thin Plates and Shells

Time : 3 Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

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P.T.O.

Unit I

1. What are the assumptions used in pure bending of plates ? Derive the expression for boundary condition when plate is subjected to lateral loads. **15**
2. Derive the expression of the differential equation for uniformly distributed load on circular plate without hole in centre. **15**

Unit II

3. Explain Navier's method and also derive solution for the simply supported rectangular plate with uniformly distributed load 'w' over the entire surface with Navier's solution. **15**
4. What do you understand by orthotropic plates ? Derive the differential equation for orthotropic plates. **15**

Unit III

5. Explain the deformation of shells without bending. Also explain the applications of spherical shells. **15**

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6. What do you understand by shell structures ? Also explain all the classification of shell structures. **15**

Unit IV

7. Explain and derive the expression for circular cylindrical shell loaded symmetrically with respect to its axis. **15**
8. Explain any *two* for folded plates :
 - (a) Beam action
 - (b) Plate action
 - (c) Stress distribution**15**

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