Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

MVSE-205

M.E./M.Tech. II Semester

Examination, December 2017

Theory of Plates and Shells

Time : Three Hours

Maximum Marks : 70

Note : i) Attempt any five questions.
ii) All questions carry equal marks.
iii) Assume missing data suitably.

1. Explain theory of small deflections of laterally loaded plates.

2. A simply supported of rectangular plate of dimension a × b × h is subjected to load 'P' acting over an area 'uv'. Derive the expression for deflection. Adopt Navier's approach.

3. Describe general theory of cylindrical shells. Compare 'Membrane theory' and 'Bending theory' for cylindrical shells.

4. Differentiate between
   a) Long and Short cylindrical shells
   b) Shells with and without edge beams

5. Discuss the following:
   a) Spherical shells
   b) Hyperbolic-parabolic shells
   c) Funicular shells

6. Describe in detail membrane theory for shells of double curvature
   a) SYN-elastic
   b) ANTI-elastic

7. Explain following theory of plates
   a) Approximate methods
   b) Strain energy methods
   c) Experimental methods

8. Write short notes on any four of the following:
   a) Fourier loadings
   b) Boundary conditions
   c) Continuous rectangular plates
   d) Moment curvature relationship
   e) Symmetrical bending of circular plates
   f) Equilibrium for shells of surface of revolution

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