

R09

Code No: 58097

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year II Semester Examinations, May - 2019

AEROELASTICITY
(Aeronautical Engineering)

Time: 3 Hours

Max. Marks: 75

Answer any Five Questions
All Questions Carry Equal Marks

1. What is the study of aeroelasticity? Explain the influence of aeroelastic phenomena on design. [15]
2. Explain how loadings have been determined by two dimensional strip theories? [15]
3. Write the Lagrange's equations of motion, and explain the Hamilton's principle and orthogonality conditions. [15]
4. What is control reversal? Analytically derive control reversal speed as for torsional divergence. [15]
5. What are the non-dimensional parameters used in dimensional similarity? Explain the stiffness criteria. [15]
6. Write the formulation of equations of motion for a wide rectangular cantilever beam of uniform cross section by means of continuous beam model. [15]
7. How do you prevent and control flutter? Also write about torsion-flexure flutter. [15]
8. Explain the any one of the application of aeroelasticity to engineering problem. [15]

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