

B.Tech III Year I Semester (R09) Supplementary Examinations June 2017

AEROSPACE VEHICLE STRUCTURES - II

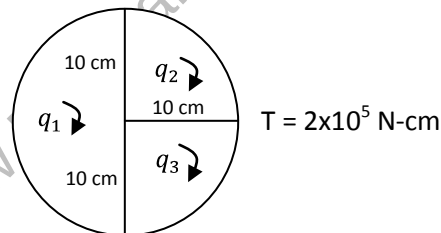
(Aeronautical Engineering)

Time: 3 hours

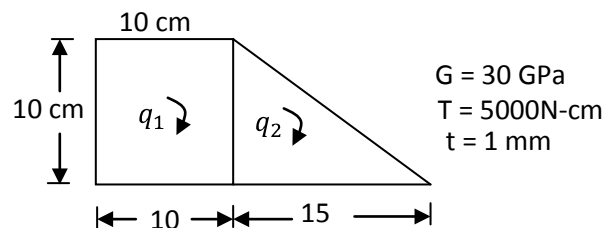
Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 Write notes on the following:
 - (a) The strength of thin-walled webs.
 - (b) The concept of effective sheet width.
 - (c) Inter-rivet and sheet wrinkling failures.
- 2 Derive the buckling equation to find out failure stress in plates and stiffened panels.
- 3 Write a detailed note on the following:
 - (a) Explain instability of stiffened panels.
 - (b) Discuss in detail about the idealization and analysis of aircraft wing structure.
- 4 Obtain expression for a bending stress in an unsymmetrical section subjected to bending moments M_x and M_y .
- 5 (a) Derive the equation to find out shear flow in a tapered wing.
(b) Analyze the shear and bending moment distribution for typical fuselage structures.
- 6 For a multi shell structure shown in figure below, determine the shear flow and angle of twist per unit length.



- 7 Find the shear flow and angle of twist per unit length for the given closed section shown in figure below.



- 8 Derive the equations to find out the primary and secondary wrapping of an open cross section subjected to torsion.
