

R09

Code No: 56071

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, April - 2018

CONCEPTUAL DESIGN OF FLIGHT VEHICLES

(Aeronautical Engineering)

Time: 3 hours

Max. Marks: 75

**Answer any five questions
All questions carry equal marks**

1. Derive the equation for total gross weight of aircraft with required table and figures. [15]
2. Explain with neat sketches various wing vertical locations and wind tips. Also discuss their advantages and disadvantages. [15]
3. Explain the following considerations:
a) Vulnerability
b) Maintainability
c) Crashworthiness
d) Producibility. [15]
4. Explain in detail the points to be considered for inlet like location, geometry and capture area calculations. [15]
5. Discuss about installed engine performance of an aircraft. [15]
6. Explain in detail the energy maneuverability methods for optimal climb trajectories and turns. [15]
7. Explain about multi variable design optimization methods and how they make an effective design configurations? [15]
8. Discuss about the points to be considered in design and how the evolution of DC aircraft took. [15]

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