

Code.No: 37149

R05

SET-1

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
IV.B.TECH - I SEMESTER REGULAR EXAMINATIONS NOV/DEC, 2009
FLIGHT VEHICLE DESIGN
(AERONAUTICAL ENGINEERING)

Time: 3hours

Max.Marks:80

Answer any FIVE questions
All questions carry equal marks

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1. Classify an existing air craft and give examples for each case and discuss why you classify them in that way? (16)
2. Explain various major constructional details of an air craft and with which conceptual sketch should indicate? (16)
3. a) Describe the transonic effects on the aero dynamics characteristics of an airfoil? (8)
b) Brief the effect of camber of an airfoil on its aero dynamic characteristics? (8)
4. Justify the answer about the major difference in the designs of the fuselages of a bomber and passenger plane with neat sketches? (16)
5. a) What are the various factors involved in deciding the location of the wing with respect to the fuselage and explain them? (8)
b) Write short notes on conic shape parameter with sketch? (8)
6. Define the following
a) Range of an aircraft (4)
b) Stall velocity (4)
c) Endurance (4)
d) Service ceiling (4)
7. Explain in detail about various forces and moments acting on an aircraft? (16)
8. Describe the considerations in the design of a passenger airplane with a cruise velocity of 400 Km/hour and crew of 4 and 75 passengers with 25 kg baggage each and draw neat sketches and graphs in justifying the solutions? (16)
