

Name:	 UPES <small>UNIVERSITY OF TOMORROW</small>
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May, 23

Course: Introduction to Aerospace Engineering	Semester: II
Program: B.Tech ASE	Time 03 hrs.
Course Code: ASEG 1001	Max. Marks: 100

SECTION A

S. No.		Marks	CO
Q1.	Classify the aircrafts in various categories.	4	CO1
Q2.	Differentiate aerodynamic center and center of pressure.	4	CO2
Q3.	List various structural components of fuselage.	4	CO3
Q4.	Explain the role of ASI and VSI indicator in aircraft.	4	CO3
Q5.	Differentiate between cryogenic and liquid propellant.	4	CO4

SECTION B

Q6.	Outline the role of Wright Brothers in the development of fixed wing aircraft.	10	CO1
Q7	Explain the concept of stall using c_l Vs α graph of an airfoil. OR List various primary and secondary control surfaces of a modern aircraft. Mention location and role of each control surface.	10	CO2
Q8	With the help of neat sketch, discuss about various structural components of wing and explain their role.	10	CO3
Q9	Emphasis on the working of electric propulsion systems. Elaborate on various categories of electrical propulsion system.	10	CO4

SECTION-C

Q 10	Categorize the flow in various regimes based on Mach number. Explain the behavior of each flow regime in detail.	20	CO2
Q 11	With the help of neat sketch, explain various components and working of a turbojet engine. Compare turbojet, turboprop and turbofan engine. OR With the help of neat sketch, explain various components and working of a liquid propellant rocket engine. Compare solid, liquid and hybrid propellant rocket engine.	20	CO4