

Reg.No. _____



Karunya UNIVERSITY

(Karunya Institute of Technology & Sciences)
(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

End Semester Examination – Nov/Dec – 2016

Code : **14AE3004**
Sub. Name : **Flight Performance and Stability**

Semester : **2016-17 ODD**
Duration : **3hrs**
Max. marks : **100**

ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)

Q. No.	Sub Div.	Questions	Course Outcome	Marks
1.		How do you achieve maximum thrust by using propellers? State answer with suitable equations and diagrams.	CO1	20
(OR)				
2.		Derive Breguet Range Equation for Propeller driven airplane and compare it to jet driven flight with neat sketch.	CO1	20
3.	a.	Derive Breguet Endurance Equation for Jet driven airplane with neat sketch.	CO1	10
	b.	Draw the mission profile of various airplane.	CO1	10
(OR)				
4.		Explain in detail about Thrust required of jet driven airplanes with neat sketch.	CO1	20
5.	a.	State Rate of Climb and derive maximum Rate of climb equation with suitable graph.	CO1	15
	b.	Differentiate the maneuver Climb and Descent of the flight.	CO1	5
(OR)				
6.		How do you achieve directional control by using rudder and state its requirement.	CO3	20
7.	a.	Derive the Longitudinal stability equation for flight with respect to lateral axis of airplane with proper diagram.	CO2	15
	b.	How do you achieve lateral control by using aileron in the flight with equations.	CO3	5
(OR)				
8.	a.	Derive the equation of motion for dynamic stability of airplane.	CO2	20
<u>Compulsory:</u>				
9.		Explain the following with neat sketch.		
	a.	a. Phugoid motion	CO2	10
	b.	b. Ruth's Stability criterion	CO2	10

ALL THE BEST