

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 : 14AE2032
Sub. Name : Aero-Elasticity

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.	a.	Explain in detail Collar’s Triangle with its Elements	CO1	20
(OR)				
2.	a.	Define Stability	CO1	2
	b.	Different Types of Stability		4
	c.	Explain in detail the Aero-Elastic instabilities of the aircraft and its responses.		12
3.	a.	Discuss the prevention techniques of Aero-Elastic instability	CO1	20
(OR)				
4.	a.	Derive the Stiffness and Influence coefficient for Two dimensional wing	CO1	20
5.	a.	Derive the derivatives for aileron effectiveness and reversal speed	CO2	20
(OR)				
6.	a.	Derive Wing torsional divergence speed for finite wing	CO2	20
7.	a.	Derive the general Dynamic Aero-elastic Equation of motion for a binary model	CO2	20
(OR)				
8.	a.	Explain in detail Types of Gust	CO2	4
	b.	Derive the equation of motion for time domain gust response for rigid Aircraft		16
<u>Compulsory:</u>				
9.	a.	Explain in detail any one the solution method and its steps to solve the Two degrees of freedom flutter	CO3	20

ALL THE BEST