Sanjay Ghodawat University, Kolhapur

2020-21

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017

EXM/P/09/00

Year and Program: SY & B.Tech Aero	**School of Technology**	**Department: Aero**
Course Code: AET204	**Course Title: Aerodynamics I**	**Semester : IV**
Day and Date:	**RE-End Semester Examination**	**Time : 2 Hrs.** **Max Marks : 50**

Instructions: 1) All Questions are compulsory.
2) Assume data wherever necessary

Q.1		**Answer/Solve the following (any Two)**	**Marks**	**Bloom's Level**	**CO**
	a)	Derive Momentum Equation with its applications.	8	L_2	1
	b)	Explain about various forces acting in aircraft with neat sketches.	8	L_2	1
	c)	Write short notes on flow over a rotating cylinder.	8	L_2	2
Q.2		**Answer/Solve the following (any two)**			
	a)	Write short notes on Kutta – Joukowaski transformation of a circle into Airfoil with neat sketch.	8	L_2	3
	b)	Explain in detail about Conformal Transformation with example.	8	L_2	3
	c)	Write short notes on Classical Thin Airfoil Theory for Cambered airfoil	8	L_2	4
Q.3		**Answer/Solve the following (any two)**			
	a)	Explain with neat sketch about Biot savart law.	9	L_2	4
	b)	An airscrew is required to produce a thrust of 4000 N at a flight speed of 120ms-1 at sea level. If the diameter is 2.5m, estimate the minimum power that must be supplied, on the basis of Froude's theory.	9	L_2	4
	c)	Describe in detail about Froude momentum theory.	9	L_2	5

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