Sanjay Ghodawat University, Kolhapur   2018-19

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017   EXM/P/09/01

Year and Program:2018-19	**School of Technology**	**Department of SY B.Tech**
Course Code: AET203	**Course Title: Elements of Aeronautical Engineering**	**Semester – III**
Day and Date: Friday 07/06/2019	**End Semester Examination (ESE)**	3तास **Time:** **Max Marks: 100** 2.30 to 5.30 pm.

Instructions:
1) All questions are compulsory.
2) Assume suitable data wherever necessary.
3) Figures to the right indicate full marks.

			Marks	Bloom's Level	CO
Q.1		**Solve any Two**			
	a)	Explain in detail about the Components of Aircraft with neat sketch?	07	L_2	CO1
		OR			
	a)	Write in brief about Classification of flying vehicles.	07	L_2	CO1
	b)	Define forces acting on an aircraft with neat sketch and also explain the generation of lift on an aircraft.	08	L_3	CO2
		OR			
	b)	Explain the pressure distribution over an airfoil with neat sketches.	08	L_3	CO2
Q.2		**Solve any Two**			
	a)	Explain the basic components and functions of Turboprop engine with neat sketch?	07	L_2	CO2
		OR			
	a)	Derive the Thrust equation of Jet Propulsion.	07	L_3	CO2
	b)	Write in brief about Aircraft Wing Structural components with neat sketch?	08	L_2	CO2
		OR			
	b)	Explain in detail about Monocoque and semiMonocoque structure of Aircraft Fuselage with neat sketch.	08	L_2	CO2

Q.3		**Solve any Two**			
	a)	Explain in detail about Helicopter Anatomy.	08	L₂	CO1
	b)	Discuss in detail about C_l Vs. α curve for unsymmetrical aerofoil and Symmetrical Aerofoil.	08	L₃	CO2
	c)	Derive the Thrust Equation of Rocket Propulsion.	08	L₃	CO2
	d)	Write about the structural components of Fuselage with neat sketch	08	L₂	CO2
Q.4		**Solve any Two**			
	a)	Explain the advantage of composite over other material used in aircraft.	09	L₂	CO3
	b)	Discuss in detail about the Titanium and Nickel alloys.	09	L₂	CO3
	c)	Write about the various Aluminum alloys used in aircraft and their applications.	09	L₂	CO3
Q.5		**Solve any Two**			
	a)	Explain the functions of primary control surfaces of an aircraft with neat sketch.	09	L₂	CO4
	b)	Derive the equation for climbing flight and gliding flight with neat sketch.	09	L₃	CO4
	c)	Classify the types of wing used in Aircraft.	09	L₃	CO4
Q.6		**Solve any Three**			
	a)	Explain in detail about super alloys used in aircraft	06	L₂	CO3
	b)	Write about High temperature creep and corrosion resistant materials.	06	L₂	CO3
	c)	Discuss in detail about Empennage Configuration.	06	L₂	CO4
	d)	Explain in detail about Thrust required and its Curves.	06	L₃	CO4