Sanjay Ghodawat University, Kolhapur 2019-20

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

Year and Program: 2019-20 & TY B.Tech | **School of Technology** | **Department of Aeronautical Engineering**

Course Code: AET305 | **Course Title: AIRCRAFT MATERIALS** | **Semester – V**

Day and Date: Saturday 23/11/19 | **End Semester Examination (ESE)** | **Time: 3 Hours** 10.30 am to 1.30 pm | **Max Marks: 100**

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		**Attempt the Following**			
	a)	Illustrate different type of nickel steels used in aircraft.	07	L_2	CO1
		OR			
	a)	Explain in detail about molybdenum steel used in aircraft.	07	L_2	CO1
	b)	Describe in detail about spot welding aluminum alloys in aircraft.	08	L_2	CO1
		OR			
	b)	What is meant by casting and Explain the different casting of aluminum alloys.	08	L_2	CO1
Q.2		**Attempt the Following**			
	a)	Explain in detail about joining methods of magnesium alloys.	07	L_2	CO1
		OR			
	a)	List down the physical properties of titanium alloys and its uses in aircraft	07	L_2	CO1
	b)	Write in brief about different type of manufacturing process of plastics.	08	L_2	CO3
		OR			
	b)	Discuss in detail about different types of plastics available in industry.	08	L_2	CO3
Q.3		**Solve any Two**			
	a)	Discuss in detail about special steels used in aviation industry	08	L_2	CO1

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	b)	Write in brief any eight aluminum alloys and its applications in aviation.	08	L_2	CO1
	c)	Write short notes on: 1)hydrogen embrittlement 2) Forging of Titanium alloy	08	L_2	CO1
	d)	Explain the following: 1) Transparent Material 2) advantages of Plastics	08	L_3	CO3
Q.4		**Solve any Two**			
	a)	Explain in detail about properties and applications of carbon fiber and glass fiber in aircraft.	09	L_2	CO2
	b)	Write in detail about different type of reinforcement and matrix used in aviation.	09	L_2	CO2
	c)	Describe in detail about properties and applications of metal fiber properties.	09	L_2	CO2
Q.5		**Solve any Two**			
	a)	Draw and explain the filament winding method of composites fabrication and its application.	09	L_3	CO3
	b)	With neat sketch describe in detail about autoclave method and its advantages	09	L_3	CO3
	c)	Sketch and explain in detail about compression molding and its applications in aircraft.	09	L_3	CO3
Q.6		**Solve any Three**			
	a)	Write short notes on particle reinforcement.	06	L_2	CO2
	b)	List down the composites parts used in commercial aircraft	06	L_4	CO2
	c)	Describe in detail about hand layup method	06	L_2	CO3
	d)	List the procedure for preparation of molding components.	06	L_4	CO3

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