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Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)

B. Tech (First Semester - Regular) Examinations, January 2026

25FYES11009 – Aircraft Material

Time: 3 hrs | Maximum: 60 Marks

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions

		CO #	Blooms Level
a.	Define ductility and state its importance in aircraft ferrous metals.	CO2	K1
b.	State any two advantages of non-ferrous metals used in aircraft construction.	CO2	K1
c.	What is heat treatment and why is it carried out on aircraft metals?	CO5	K2
d.	What is meant by tensile strength testing of aircraft materials?	CO6	K2
e.	Define galvanic corrosion and state one condition required for its occurrence.	CO5	K2

PART – B **(10 x 5 = 50 Marks)**

Answer ***ALL*** the questions

		Marks	CO #	Blooms Level
2. a.	Explain the characteristics and properties of aircraft ferrous metals.	5	CO1	K1
b.	Describe the types, characteristics, and uses of alloy steels used in aircraft.	5	CO1	K1
	OR			
c.	Explain the identification of common alloy steels used in aircraft maintenance.	5	CO1	K1
d.	Describe the testing of ferrous materials for hardness, tensile strength, fatigue strength, and impact resistance.	5	CO1	K1
3.a.	Explain the characteristics and properties of aircraft non-ferrous metals.	5	CO2	K3
b.	Describe the effects of alloying elements on non-ferrous metals.	5	CO2	K3
	OR			
c.	Explain the properties and identification of common non-ferrous materials used in aircraft.	5	CO2	K3
d.	Describe the testing of non-ferrous materials for hardness, tensile strength, fatigue strength, and impact resistance.	5	CO1	K4
4.a.	Explain the metal working processes of aircraft ferrous metals.	5	CO4	K2
b.	Describe the heat treatment processes applied to aircraft metals.	5	CO5	K2
	OR			
c.	Explain the heat treatment of non-ferrous materials and their applications.	5	CO5	K2
d.	Describe the effects of heat treatment on the properties of aircraft materials.	5	CO3	K5
5.a.	Explain the hardness testing of aircraft materials.	5	CO6	K1
b.	Describe the tensile strength test for aircraft materials.	5	CO6	K1
	OR			
c.	Explain the fatigue strength testing of aircraft materials.	5	CO6	K1
d.	Describe the impact resistance testing of aircraft materials.	5	CO6	K1
6.a.	Explain chemical corrosion in aircraft materials with examples.	5	CO6	K4
b.	Describe the galvanic corrosion process and conditions required.	5	CO6	K4
	OR			
c.	Explain the types of corrosion found in aircraft and their identification.	5	CO6	K4
d.	Describe the causes of corrosion and material susceptibility in aircraft.	5	CO6	K4

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