



CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

15AE45

Fourth Semester B.E. Degree Examination, July/August 2021 Aircraft Material Science

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions.

- 1 a. Discuss the importance and application of magnesium alloys in aircraft structures. (08 Marks)
b. Explain the requirements of aircraft material. (08 Marks)
- 2 a. Explain about the inspection methods of aircraft material. (08 Marks)
b. Explain the classification of corrosion-resistant alloys. (08 Marks)
- 3 a. Explain the heat treatment process of super alloy. (06 Marks)
b. Define super alloy. Discuss briefly nickel based super alloy and its application. (10 Marks)
- 4 a. Explain metal matrix composite based on aluminium and magnesium based composites for engines. (08 Marks)
b. Explain the need for composite materials in aircraft application. (08 Marks)
- 5 a. Discuss about the laminated plate glass and laminated sheet glass. (08 Marks)
b. Explain the properties of ceramics with examples of ceramic materials. (08 Marks)
- 6 a. Explain the classification of plastics based on their reaction to heat and based on their commercial use. (08 Marks)
b. Explain the properties and applications of glass and transparent plastics. (08 Marks)
- 7 a. Discuss about the aircraft painting process. (08 Marks)
b. Define ablation process. Explain ablative material composition. (08 Marks)
- 8 a. Explain the application of ablative materials in aerospace industry. (08 Marks)
b. Explain the types of aircraft woods and their uses. (08 Marks)
- 9 a. Define propellant. Explain the desirable properties of the propellants. (08 Marks)
b. Explain the various methods used for corrosion protection. (08 Marks)
- 10 a. Explain the methods employed to prevent corrosion. (08 Marks)
b. Explain about the materials which are used for rocket and missiles. (08 Marks)

* * * * *

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42+8=50, will be treated as malpractice.