



10AE662

Sixth Semester B.E. Degree Examination, Aug./Sept.2020
Aircraft Materials

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting atleast TWO questions from each part.

PART – A

- 1 a. List down and explain the general properties required by materials that can be used in aircraft applications. (06 Marks)
b. Write a note on testing of Aircraft materials. (08 Marks)
c. Write a short notes on : i) Smart materials ii) Nano materials. (06 Marks)
- 2 a. Discuss the importance of titanium alloys and its applications in aircraft structures. (10 Marks)
b. What is Super alloys? Discuss briefly nickel based super alloy and its applications. (10 Marks)
- 3 a. Explain the need for composite materials in aircraft applications. (10 Marks)
b. Explain metal matrix composites based on aluminum and magnesium based composite for engines. (10 Marks)
- 4 a. Explain the properties and applications of glass and transparent plastics. (10 Marks)
b. Explain the applications of adhesives and sealants in aircraft. (10 Marks)

PART – B

- 5 a. Explain the following with relevant sketches :
i) Phenomenon of Superconduction. (12 Marks)
ii) Application of abrasive materials in aerospace. (08 Marks)
b. With the help of a neat sketch explain abrasion process. (08 Marks)
- 6 a. List out the desirable properties of wood used in aerospace. Explain any three of them. (12 Marks)
b. Write short notes on :
i) Dopes and doping ii) Types of aircraft paints. (08 Marks)
- 7 a. What is Corrosion and explain the different types of corrosion? (10 Marks)
b. Describe the Cadmium plating process of aircraft materials. (10 Marks)
- 8 a. Explain the desirable properties required for cryogenic materials. (10 Marks)
b. Distinguish between Mono propellants and Bipropellants. (10 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.