



Sixth Semester B.E. Degree Examination, Jan./Feb.2021 Aircraft Materials

Time: 3 hrs.

Max. Marks:100

Note: Answer FIVE full questions, selecting at least TWO questions from each part.

PART - A ant properties

- a. List down and explain the important properties required by materials that can be used in aircraft application. (10 Marks)
 - b. With neat sketches, explain Izod and Charpy test.

(10 Marks)

- 2 Explain the following:
 - a. Aluminum and aluminum alloys
 - b. Magnesium and magnesium alloys
 - c. Titanium and titanium alloys
 - d. Nickel based super alloys.

(20 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 various parties that are commonly used in aircraft application. (10 Marks)
 - b. What are the properties required by glazing materials.

(04 Marks)

- c. Give a brief note on laminated plate glass and laminated sheet glass.
- (06 Marks)

PART - B

- 5 a. Define superconducting materials. Explain the properties of super-conductors. (10 Marks)
 - b. What is ablation process? Explain ablative materials composition.

(10 Marks)

- 6 a. Explain the various types of aircraft woods and its applications. (10 Marks)
 - b. Explain various types of aircraft paints.

(10 Marks)

- 7 a. Explain the different types of plating operation used in the prevention of corrosion in aircraft components. (10 Marks)
 - b. Explain the different treatments used for magnesium alloy parts.

(10 Marks)

- 8 a. Explain the various considerations for rockets and missiles material selection and requirements. (10 Marks)
 - b. With a neat sketch, explain the types of solid propellants.

(10 Marks)

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