

CBCS SCHEME



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

17AE45

Fourth Semester B.E. Degree Examination, June/July 2019 Aircraft Material Science

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Name different types of testing methods of aircraft material and explain in briefly. (12 Marks)
- b. Write the selection criteria based on properties for materials used in Aircraft. (08 Marks)

OR

- 2 a. Explain briefly the surface treatment methods of super alloys. (08 Marks)
- b. Explain the following for magnesium alloy casting
 - i) Sand casting
 - ii) Permanent mold costing
 - iii) Die casting
 (12 Marks)

Module-2

- 3 a. Describe briefly about the Cobalt based super alloys and its micro structure. (10 Marks)
- b. Write the application of super alloys. (10 Marks)

OR

- 4 a. Explain the following fabrication process of Carbon – Carbon composites
 - i) Liquid phase infiltration process
 - ii) Chemical vapour deposition process. (12 Marks)
- b. Write the properties and applications of carbon - carbon composites. (08 Marks)

Module-3

- 5 a. Classify polymer material and explain them briefly. (10 Marks)
- b. Give the typical properties of polymer materials, explain. (10 Marks)

OR

- 6 a. Write the types of Non – scatterable glass available explain briefly. (08 Marks)
- b. Name and explain transparent plastic materials commonly used in Aircraft. (12 Marks)

Module-4

- 7 a. Explain about Ablation process and write advantages of ablation process. (10 Marks)
- b. Describe the classification and structure of wood. (10 Marks)

OR

- 8 a. Write short notes on Dope. (08 Marks)
- b. What are the components used in paints and explain it briefly. (12 Marks)

Module-5

- 9 a. Explain briefly about Plating operations in corrosion protective treatments. (12 Marks)
- b. Write the corrosion protective technique and explain them shortly. (08 Marks)

OR

- 10 a. List the materials used of Rockets and Missiles explain its properties. (10 Marks)
- b. Explain the following : i) Uniaxial Testing ii) Strip biaxial iii) Tubular test. (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.