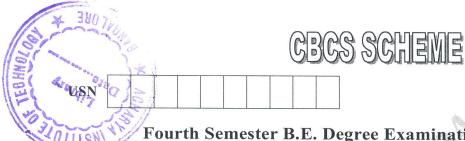
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Fourth Semester B.E. Degree Examination, Jan./Feb. 2021 Aircraft Material Science

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- a. What are the General properties of materials? Explain the requirement of aircraft material
 - b. Give a reasons for aluminum being so popular in aircraft industry. Mention their application.
 (10 Marks)

OR

- 2 a. Define the following write down their advantages and disadvantages.
 - i) Normalizing
 - ii) Quenching
 - iii) Carburizing
 - iv) Case hardening.

(10 Marks)

b. Name different types of inspection method. Explain them briefly, any three.

(10 Marks)

Module-2

- a. What are the Metal Matrix Composites (MMC)? Mention their applications in aircraft and also types.
 - b. What is super alloy? Discuss briefly Nickel based super alloys.

(10 Marks)

OR

- 4 a. Explain PMC and CMC. Mention their applications in aircraft. (10 Marks)
 - b. Describe 3 types of matrices. Discuss the growth of composite usage in aircraft structures.
 (10 Marks)

Module-3

- 5 a. Briefly explain the characteristics and typical application of glass and transparent plastic materials. (10 Marks)
 - b. Define adhesives and sealants. Give their application in aircraft.

(10 Marks)

- OR
- 6 a. Explain different types of non-Scatterable glass (Types of glass).

(10 Marks)

- b. Write a short notes on the following:
 - i) Thermoplastic
 - ii) Thermosetting plastic.

(10 Marks)

Module-4

- 7 a. Explain the following:
 - i) Ablation process with uses
 - ii) Super conducting with uses.

(10 Marks)

b. Give the aerospace application of ablative materials and super conducting materials.

(10 Marks)

(10 Marks)

OR

8	a.	Name the different types of aircraft paints. Explain the purpose of painting.			
	b.	Write a short notes on the following:	(10 Marks)		
		i) Seasoning of wood			
		ii) Plywood			
	0		(06 Marks)		
	c.	Differentiate between seasoning of wood and plywood.	(04 Marks)		
	Module-5				
9	a.	Explain the operation of alodizing process.	(10 3/ 1)		
	20		(10 Marks)		
	b.	Explain the following Corrosion protection process			
		i) Cleaning operation			
		ii) Plating operations.	(10 Marks)		
			(20 1124115)		
		O.D.			
4.0		OR.			
10	a.	List the materials used for rocket and missile. Explain the desirable properties.	(10 Marks)		
	b.	Describe the following:			
		i) Strin kinnin1			