

Model Question Paper-2 with effect from 2019-20 (CBCS Scheme)

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Fourth Semester B.E. Degree Examination Aircraft Material Science

TIME: 03 Hours

Max. Marks: 100

Note: 01. Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.

Module -1			*Bloom's Taxonomy Level	Marks
Q.01	a	Define the following: i) Normalizing ii) Quenching iii) Carburizing iv) Case hardening	L1	4
	b	Describe how yield point of a material can be determined.	L2	8
	c	Explain the methods that are commonly used to detect minute surface.	L2	8
OR				
Q.02	a	Briefly explain the material application and trends in usage in aircraft structures and engines with reasoning for the same.	L2	10
	c	Name the different types of inspection method. Explain them briefly.	L2	10
Module-2				
Q. 03	a	Define the powder metallurgy process and briefly explain the steps involved in it, also state the advantages and limitations of the same.	L2	12
	b	Explain the manufacturing process involved in super alloys.	L2	8
OR				
Q.04	a	Define and classify the composites	L1	4
	b	Explain in detail about carbon-carbon composites production and their properties and application	L2	8
	c	Explain the ablation process and ablative composites based on polymers and ceramic matrix.	L2	8
Module-3				
Q. 05	a	Explain the categories of plastics and characteristics of plastic.	L1	8
	b	Give the properties of polymer materials, explain	L2	8
	c	Write short notes on: Shatter proof glass.	L2	4
OR				
Q. 06	a	What are ceramic materials? Write in detailed properties of ceramic materials.	L1	8
	b	Explain adhesive and sealants. Write their application in aircraft.	L2	8
	c	Write short notes on: 1) Vinylite 2) Plastecele	L2	4
Module-4				
Q. 07	a	Explain the working of ablator with neat diagram.	L2	10
	b	Explain and classify the various structure of wood.	L2	10
OR				
Q. 08	a	What are the components used in paints and explain it briefly?	L2	10
	b	Explain the purpose of doping and commonly used dopes.	L2	10
Module-5				
Q. 09	a	Explain briefly about plating operations in corrosion protective treatments.	L1	10
	b	Explain the operation of alodizing process.	L2	10
OR				
Q. 10	a	List and explain different materials used for rockets and missiles applications.	L1	10
	b	Write short notes on: 1) Strip-biaxial 2) Uniaxial testing	L2	6
	c	Write a note on insulating materials for cryogenic engines.	L2	4