

Model Question Paper (2018 Scheme)

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Fifth Semester B.E. Degree Examination 18IP56: Composite Materials

TIME: 03 Hours

Max. Marks: 100

Note: Answer any one full question from each module

Module - 1			Marks
Q.01	a)	What are composites? Discuss the roles (functions) of matrix and reinforcement in composite materials.	10
	b)	What are advanced composites? List and briefly explain the limitations of composite materials.	10
OR			
Q.02	a)	With the help of neat sketches explain 'Pultrusion' and 'Pulforming'	10
	b)	Classify the composites based on reinforcement. Briefly discuss the types of continuous fibers.	10
Module – 2			
Q. 03	a)	Define composite machining. Explain the Purposes of Machining.	10
	b)	List and briefly explain the Mechanical Fasteners	10
OR			
Q.04	a)	List and explain the design parameters for Bolted joints	10
	b)	With a neat sketch explain the Water-Jet cutting	10
Module – 3			
Q. 05	a)	Briefly explain any two structural application of Composites	10
	b)	Explain the Major and Minor Poisson's ratios.	10
OR			
Q. 06	a)	What are volume and mass fractions? Explain briefly.	10
	b)	Briefly explain the Automotive and Marine applications of Composites.	10
Module – 4			
Q. 07	a)	What is MMC? Explain their mechanical properties.	10
	b)	Briefly explain the Wear and Machinability properties of MMCs	10
OR			
Q. 08	a)	Explain Polymer based Sandwich structures.	10
	b)	What are Shape Memory Alloys? Explain their applications.	10
Module – 5			
Q. 09	a)	What are natural composites? Explain the classification of Natural fibers.	10
	b)	Mention the advantages and limitations of Natural fibers	10
OR			

Q. 10	a)	With neat sketches, explain the Jute, Sisal, and Bamboo fibers.	10
	b)	List and explain the applications of the Natural Composites	10

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Note: Answer any one full question from each module

Module - 1			Marks
Q.01	a)	What are composites? Explain the classification composites.	10
	b)	List and briefly explain the characteristics of composite materials.	10
OR			
Q.02	a)	With the help of neat sketches explain the hand lay-up technique.	10
	b)	With a neat sketch explain filament winding process.	10
Module – 2			
Q. 03	a)	What is composite machining? Explain the different types of machining operations.	10
	b)	What is adhesive bonding? Explain the design guidelines for adhesive bonding.	10
OR			
Q.04	a)	Explain the Challenges faced during machining of composites	10
	b)	With a neat sketch explain the LaserJet cutting	10
Module – 3			
Q. 05	a)	List the structural applications of composites and briefly explain any two of them.	10
	b)	Explain the Major and Minor Poisson's ratios.	10
OR			
Q. 06	a)	What are volume and mass fractions? Explain briefly.	10
	b)	Derive the equation for transverse and shear modulus for composites.	10
Module – 4			
Q. 07	a)	What is MMC? Explain their mechanical properties.	10
	b)	Briefly explain Wear and Machinability properties of MMCs	10
OR			
Q. 08	a)	Explain shape and distribution of particulates on properties of composites.	10
	b)	Define Shape Memory Alloys. Explain their applications.	10
Module – 5			
Q. 09	a)	What are Natural composites? Explain the Characteristics of Natural fibers.	10

	b)	Mention the merits and demerits of Natural fibers.	10
		OR	
Q. 10	a)	With neat sketches explain the Silk, Feather Cotton fibers.	10
	b)	Explain the Recent developments in Natural fiber composites	10