E **Reg. No. :** | | | | | | | | | | |

Question Paper Code: 55P25

Ph.D COURSE WORK EXAMINATION, NOV 2019

Elective

Course work

15PCD525 - COMPOSITE MATERIALS AND MECHANICS

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1.	(a)	Explain bag moulding and hand layup process in composite development.	CO1- U	(20)
		Or		
	(b)	Explain the properties of		
		(i) Long fiber composites and Short fiber composites	CO1- U	(10)
		(ii) Briefly explain about bonding techniques of composites.	CO1- U	(10)
2.	(a)	Explain in detail about the stress-strain behavior of the composite material with suitable graph. Also infer details on rotations of stresses and residual stress on composite material.	CO2-U	(20)
		Or		
	(b)	Derive an expression for Young's modulus of fibre reinforced composites in iso-stress condition.	CO2-U	(20)
3.	(a)	Derive the expression for finding the stress strain relation for angle ply laminates.	CO3- U	(20)
		Or		
	(b)	Derive an expression for three stiffness matrices [A], [B] and [D] for a 2^D laminates composite.	CO3-U	(20)
4.	(a)	Briefly explain the significant factors influencing on composite delamination.	CO4- U	(20)
		Or		

	(b)	(i) Enlist the failure criterion of the composite materials in details.	CO4- U	(10)
		(ii) Write short notes on sandwich composite.	CO4- U	(10)
5.	(a)	Explain the squeeze casting of MMC for structural applications.	CO5-U	(20)
		Or		
	(b)	Explain the different clause of composite material with specified applications.	CO5-U	(20)