		Register Number:		……..
B.E or **B.TECH DEGREE EXAMINATIONS: NOV/DEC 2012**				
Fifth Semester				
TEXTILE TECHNOLOGY				
TTX211**:** Textile Composites				
Time: Three Hours				**Maximum Marks: 100**
Answer all the Questions:-				
PART A (10 x 1 = 10 Marks)				
1.	A composite material is a material system consisting of two (or more) materials, which are distinct at a physical scale greater than about			
	a)	1 meter	b)	1 μm
	c)	1 mm	d)	1 cm
2.	_____ material is brittle, hard, strong in compression, weak in shearing and tension.			
	a)	Ceramic	b)	Plastic
	c)	metal	d)	composite
3.	An example for thermoplastic resin is			
	a)	Polypropylene	b)	Epoxy
	c)	silicones	d)	Polyurethane
4.	_____ fibre is based on poly (p-phenylene terephthalamide).			
	a)	Glass	b)	carbon
	c)	Kevlar	d)	boron
5.	_____ is an indication of a composite material's ability to resist defects or discontinuities such as holes and notches.			
	a)	Fracture Toughness	b)	tensile strength
	c)	Impact strength	d)	Delamination
6.	Mass Density of a Ply composite is denoted by "ρ" =			
	a)	$\rho_f V_f + \rho_m V_m$	b)	$\rho_f V_f - \rho_m V_m$
	c)	$\rho_f * V_f * \rho_m * V_m$	d)	$(\rho_f V_f) / (\rho_m V_m)$
7.	Geodesics are the most commonly used fibre trajectories in _____ process.			
	a)	Spray layup	b)	pultrusion

	c)	RTM	d)	filament winding	
8.	_____ is the closed mould composite manufacturing process.				
	a)	Spray lay up	b)	hand laminating	
	c)	filament winding	d)	pultrusion	
9.	The fibre volume fraction of cured polymer-matrix composites can be obtained by				
	a)	areal weight	b)	ignition loss	
	c)	interface strength	d)	Accelerated weathering test	
10.	_____ test is used to determine interlaminar shear strength of parallel fibers.				
	a)	Short beam shear	b)	Iosipescu shear	
	c)	rail shear	d)	out of plane shear	

PART B (10 x 2 = 20 Marks)

11.	Mention any four advantages of composites compared to conventional engineering materials.
12.	Classify Composite w.r.t matrix.
13.	What is lamina and laminate?
14.	List any four widely used high performance fibres in the composite industry.
15.	What is “Rule of Mixture”?
16.	Define Interface.
17.	Mention the various resin flow strategies in Resin transfer moulding process.
18.	What is vacuum bagging?
19.	Mention any four tests performed in composite materials.
20.	Mention any four applications of the composites.

PART C (5 x 14 = 70 Marks)

21.	a)		Explain briefly the various conventional engineering materials and composites w.r.t properties, advantages and limitations.	14
			(OR)	
	b)		Explain briefly the various reinforcement forms used in composites.	14

22.	a)		Explain briefly the thermoplastic resins w.r.t properties, limitation and applications.	14
			(OR)	
	b)		Explain briefly the prepreg manufacturing technique with neat sketch.	14
23.	a)		Explain briefly the Rule of mixture procedure in the property prediction of the composites.	14
			(OR)	
	b)		Explain briefly the Various Interface adhesion mechanisms with neat sketch.	14
24.	a)		Explain briefly the Resin transfer moulding technique of composite production with neat sketch.	14
			(OR)	
	b)		Explain briefly the Pultrusion technique of composite production with neat sketch.	14
25.	a)		Explain briefly the tensile and compression testing of composite material.	14
			(OR)	
	b)	(i)	Explain briefly the Interlaminar shear testing of composite with neat sketch.	10
		(ii)	List any five Nondestructive Testing methods of composite material.	4