Seat	No.:	Enrolment No.	
GUJARAT TECHNOLOGICAL UNIVERSITY			
M.E –I st SEMESTER–EXAMINATION – JULY- 2012			
			2
•	,	Name: Material Science and Materials	
Time: 2:30 pm – 05:00 pm Total Mar		0	
Inst	ruct	tions:	
1	. At	tempt all questions.	
		ake suitable assumptions wherever necessary.	
3	. Fig	gures to the right indicate full marks.	
Q.1	(a)	Make a brief note on the ionic, covalent and metallic bond.	07
Ų.1	(b)	Explain the difference between crystalline and non crystalline structure.	07
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Q.2	(a)	Differentiate the elastic and plastic deformation	07
	(b)	State and justify the assumptions made in theory of elasticity	07
	(b)	OR Explain the plactic deformation with help of flow approx	07
	(D)	Explain the plastic deformation with help of flow curve.	U/
Q.3	(a)	State the favorable aspects of composite material and explain its classification.	07
	(b)	State the advantages of advance ceramic material over conventional metal.	07
		OR	
Q.3	(a)	Write short note on super alloys.	07
	(b)	State and explain the causes of failure.	07
Q.4	(a)	Write short note ultra sonic testing of metal.	07
۷۰۰	(b)	Discuss the applications of the x-ray radiography test.	07
		OR	
Q.4	(a)	State and explain the principle of operation of laser.	07
	(b)	State the important aspects of dielectric materials in context with the engineering application.	07
		approation.	
Q.5	(a)	Discuss on material performance on elevated temperature.	07
-	(b)	Define corrosion and explain how it can be controlled?	07

Q.5 (a) Explain the difference between anisotropic and isotropic solid.(b) Write short note on Debye theory.

OR

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