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GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER- III (NEW)EXAMINATION - SUMMER 2015

Subject Code: 2130506 Date: 11/06/2015

Subject Name: Chemical Engineering Materials

Time: 02.30pm-05.00pm Total Marks: 70

Instructions:

1. Attempt all questions.

- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.

	Q.1	(a)	Explain Bohr's Model with its drawbacks.	07			
		(b)	List out different X-ray diffraction methods and explain any two.	07			
	Q.2	(a)	Explain primary bonding in solids.	07			
	-	(b)	Define Refractories & explain its classification.	07			
			OR	07			
		(b)	Define Abrasives & explain its classification.	07			
	Q.3	(a)	Explain different types of crystal structure with its bravais lattices.	07			
		(b)	Explain classification of ceramics.	07			
	0.1	()	OR				
	Q.3	(a)	Which are the methods to control and prevent the corrosion? Explain any two.	07			
		(b)	Explain the type of silicate structure of ceramics.	07			
	Q.4	(a)	Explain electrochemical corrosion with its mechanism.	07			
		(b)	Define the term: (1) Co-ordination number	07			
			(2) Galvanic corrosion				
			(3) Bakelite				
			(4) Plasticity (5) Permeability				
			(6) Creep				
			(7) Ferroelectricity				
	0.4	(-)	OR				
	Q.4	(a)	(1) Differentiate thermosetting plastic and thermoplastic.(2) Write a short note on Teflon.	03 04			
		(b)	What is Hardening? Explain the requirements of hardening.	07			
	Q.5	(a)	Explain composites laminates materials.	07			
		(b)	What is Powder metallurgy? Give its application, advantage & disadvantage.	07			
OR							
	Q.5	(a)	What is the purpose of annealing? Explain 'Full annealing'.	07			
		(b)	Explain composites surface coatings.	07			
