Seat No.: _____ Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI (NEW) - EXAMINATION – SUMMER 2018

Subject Code:2163607 **Date:08/05/2018**

Subject Name:Ceramic Coatings

Time:10:30 AM to 01:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

			MARKS
Q.1	**(a)**	Define abnormal grain growth.	**03**
	(b)	Explain how plastic deformation take place in ceramic materials..	**04**
	(c)	Define a whiteware body. Describe the role of feldspar in whitewares bodies.	**07**
Q.2	**(a)**	Define nucleation and its types.	**03**
	(b)	Explain the model of homogeneous nucleation with mathematical derivation.	**04**
	(c)	Explain nucleation phenomena. Explain difference between nucleation and growth.	**07**
		OR	
	(c)	Write down what is jollying, jiggering and extrusion.	**07**
Q.3	**(a)**	Describe synthesis of Sea water magnesia	**03**
	(b)	Explain the phase diagram of Al_2O_3-SiO_2	**04**
	(c)	Define flint. Explain different polymorphs of Barium Titanate	**07**
		OR	
Q.3	**(a)**	Define normal and inverse spinel.	**03**
	(b)	Describe the occurrences of chrome ore.	**04**
	(c)	Describe the structure of chrome ore in detail	**07**
Q.4	**(a)**	What is natural magnesia?	**03**
	(b)	Define different types of Magnesia.	**04**
	(c)	Describe occurrences of magnesia	**07**
		OR	
Q.4	**(a)**	Define flux materials.	**03**
	(b)	Write down the role of flux in composition.	**04**
	(c)	Write down the role of wollastonie, nepheline syenite and feldspar as flux.	**07**
Q.5	**(a)**	Define R.U.L.	**03**
	(b)	Describe the difference between R.U.L. and Creep.	**04**
	(c)	Explain the role of silica, soda ash and alumina in soda lime silica glass	**07**
		OR	
Q.5	**(a)**	What is meant by creep?	**03**
	(b)	Explain enthalpy vs. temperature diagram of a glass forming melt.	**04**
	(c)	What are raw materials normally used in whiteware body making? Explain the parameters for raw material selection	**07**

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