Seat No.: _____ Enrolment No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– VII (New) EXAMINATION – WINTER 2019

Subject Code: 2173614 **Date: 26/11/2019**

Subject Name: Refractories-II

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 on line purging.	03
	(b)	Explain the oxidation process in LD converter during liquid steel making.	04
	(c)	Discuss the polymorphic transformation of silica. What is meant by refractoriness under load of a material? Explain	07
Q.2	(a)	Describe the structure of kaolinite.	03
	(b)	Differ between biotite and muscovite.	04
	(c)	Explain the phase diagram of Fe-Fe_3C.	07
		OR	
	(c)	Explain the phase diagram of Calcia and Magnesia	07
Q.3	(a)	Explain the difference between nucleation and growth.	03
	(b)	Explain Growth phenomena.	04
	(c)	Explain the model of nucleation with mathematical derivation	07
		OR	
Q.3	(a)	What is bursting of magchrome bricks?	03
	(b)	What is recrystallization and abnormal grain growth?	04
	(c)	Write down the processing of synthesis of mag carbon bricks.	07
Q.4	(a)	Describe the occurrences of chrome ore.	03
	(b)	Define normal and inverse spinel.	04
	(c)	Define steel. Explain different types of steel.	07
		OR	
Q.4	(a)	Why gamma alumina is called pseudo spinel?	03
	(b)	Discuss various types of alumina.	04
	(c)	Describe synthesis of alumina by Bayer's process.	07
Q.5	(a)	What is sea water magnesia?	03
	(b)	Write various applications of alumina.	04
	(c)	Explain the role of silica, soda ash and alumina in soda lime silica glass.	07
		OR	
Q.5	(a)	Define aluminosilicates with examples.	03
	(b)	Describe occurrences of alumina.	04
	(c)	What are raw materials normally used in glass making? Explain the parameters for raw material selection.	07

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