

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE- SEMESTER-VII (NEW) EXAMINATION – WINTER 2020****Subject Code:2173604****Date:19/01/2021****Subject Name:Whitewares-I****Time:10:30 AM TO 12:30 PM****Total Marks: 56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
<b>Q.1</b>	(a) Describe effect of heating on tri axial whitewares body.	<b>03</b>
	(b) Explain the difference between Reaction bonded and hot pressed silicon nitride	<b>04</b>
	(c) Describe in brief role of clay, quartz and feldspar in Tri axial body	<b>07</b>
<b>Q.2</b>	(a) Explain extrusion	<b>03</b>
	(b) Differ between slip casting and jiggering	<b>04</b>
	(c) Explain the Tape casting process in detail.	<b>07</b>
<b>Q.3</b>	(a) Describe synthesis of Sea water magnesia	<b>03</b>
	(b) Explain the phase diagram of $\text{Al}_2\text{O}_3\text{-SiO}_2$	<b>04</b>
	(c) Describe the transformation toughening process of partially toughened zirconia.	<b>07</b>
<b>Q.4</b>	(a) Define normal and inverse spinel.	<b>03</b>
	(b) Describe the occurrences of chrome ore.	<b>04</b>
	(c) Describe the structure of chrome ore in detail.	<b>07</b>
<b>Q.5</b>	(a) What is natural magnesia?	<b>03</b>
	(b) Define different types of magnesia.	<b>04</b>
	(c) Describe occurrences of magnesia	<b>07</b>
<b>Q.6</b>	(a) Define flux materials.	<b>03</b>
	(b) Write down the role of flux in composition.	<b>04</b>
	(c) Write down the role of wollastonite, nepheline syenite and feldspar as flux.	<b>07</b>
<b>Q.7</b>	(a) Explain polymorphic transformation of zirconia.	<b>03</b>
	(b) Differ between fully and partially stabilized zirconia.	<b>04</b>
	(c) Explain the role of silica, soda ash and alumina in soda lime silica glass	<b>07</b>
<b>Q.8</b>	(a) What is meant by creep?	<b>03</b>
	(b) Explain enthalpy vs. temperature diagram of a glass forming melt.	<b>04</b>
	(c) What are raw materials normally used in whiteware body making? Explain the parameters for raw material selection	<b>07</b>

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