

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2018****Subject Code:2153615****Date:04/12/2018****Subject Name:Processing of Glass & Ceramics****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 composite materials.	03
	(b) Write down the importance of different milling variables in detail.	04
	(c) Why hot pressing is used in ceramic industries and how does it better than ordinary pressing? Explain the relation between grain size and magnitude of pressure.	07
Q.2	(a) Define what is milling.	03
	(b) What are differences in characteristics between ordinary ball mill and planetary ball mill?	04
	(c) Write down the significance of ball to powder ratio for planetary ball milling.	07
	OR	
	(c) Write down short notes of impact milling.	07
Q.3	(a) Define cold isostatic pressing.	03
	(b) Describe the parameters for isostatic pressing.	04
	(c) Explain in detail why critical speed of ball milling is important for milling purposes?	07
	OR	
Q.3	(a) What is Vitreous network theory as per Zachariason.	03
	(b) Define network former, intermediate and modifier.	04
	(c) Differ between hot and cold isostatic pressing. What is jiggering?	07
Q.4	(a) Write down what is cold isostatic pressing.	03
	(b) Explain the glass refining with some examples.	04
	(c) Describe the transformation toughening of zirconia bodies.	07
	OR	
Q.4	(a) Define sol and gel.	03
	(b) Explain co precipitation process.	04
	(c) Explain the role of clay, quartz, feldspar in earthenware body making.	07
Q.5	(a) What is jollying?	03
	(b) Describe extrusion process.	04
	(c) What are the raw materials normally used in whiteware body making? Explain the parameters for raw material selection.	07
	OR	
Q.5	(a) Define chrome structure.	03
	(b) What are raw materials normally used in whiteware body making?	04
	(c) Explain the role of silica, soda ash and alumina in soda lime silica glass.	07