

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII (NEW) EXAMINATION – WINTER 2017
Subject Code: 2182111
Date: 10/11/2017
Subject Name: Ceramic and Polymer Materials (Department Elective -II)
Time: 02:30 PM TO 05:00 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) List the general characteristics of ceramic materials.	03
	(b) Give comparison between ceramic and non-ceramic materials.	04
	(c) What is ceramics? Classify the ceramic materials based on application.	07
Q.2	(a) Compare polymer with crystal.	03
	(b) Name some naturally occurring and some synthetic polymers.	04
	(c) What is polymer? Illustrate two mechanisms in brief.	07
	OR	
	(c) Give classification of polymers. Describe the factors affecting properties of polymers.	07
Q.3	(a) Distinguish between traditional ceramics and advanced ceramics on the basis of some examples.	03
	(b) List the thermal properties of ceramics.	04
	(c) Illustrate with figure ceramic manufacturing technique of slip casting.	07
	OR	
Q.3	(a) What are the basic steps for processing of ceramics?	03
	(b) What are metallic glass?	04
	(c) What are the application of glass fibers in composite and telecommunication?	07
Q.4	(a) Draw crystal structure in ceramics for A_mX_n type. (any two)	03
	(b) What do you mean by Cross linking?	04
	(c) Draw $Al_2O_3 - SiO_2$ phase diagram.	07
	OR	
Q.4	(a) List the glass forming methods.	03
	(b) Briefly explain Vulcanization of rubber.	04
	(c) Write a short note on Perovskite structure of ceramics with examples.	07
Q.5	(a) Write the application of boron nitride tools.	03
	(b) The silica and silicates are same or different. Justify the statement.	04
	(c) Give the classification of refractories. Categorize the refractories based on metallurgical processes.	07
	OR	
Q.5	(a) Discuss the properties of silica refractories.	03
	(b) Briefly explain Vycor glass.	04
	(c) Write a short note on Silicon nitride.	07
