

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII(NEW) EXAMINATION – SUMMER 2019

Subject Code:2183901**Date:15/05/2019****Subject Name:Nanolithography****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: Photoresist.	03	
	(b) Differentiate between Positive and Negative photoresists.	04	
	(c) Explain basic process of Photolithography.	07	
Q.2	(a) What is resist soft bake?	03	
	(b) Explain spin coating of resist.	04	
	(c) Explain Acid-catalyzed DUV resist	07	
OR			
Q.3	(c) Explain Adhesion Promotion.	07	
	(a) Write basic principle of nanoimprint lithography.	03	
	(b) Explain fabrication of mold for nanoimprint lithography.	04	
Q.3	(c) Write note on X-ray Lithography.	07	
	OR		
	Q.3	(a) What is residual layer?	03
(b) Explain separating the mold and resists after nanoimprint.		04	
(c) Write note on Nano-imprint Lithography.		07	
Q.4	(a) Write basic process of XRL.	03	
	(b) Give differences between High Resolution and Deep XRL.	04	
	(c) Write a short note on X-ray source used for XRL.	07	
OR			
Q.4	(a) What is resist hard bake?	03	
	(b) Explain historical background leading to nanoimprint lithography.	04	
	(c) Write applications of nanoimprint lithography.	07	
Q.5	(a) Define negative resist and give examples.	03	
	(b) Explain steps involved in preparation of resist for photolithography.	04	
	(c) Write note on Applications of X-ray Lithography.	07	
OR			
Q.5	(a) Define positive resist and give examples.	03	
	(b) Explain mask used for X-ray Lithography.	04	
	(c) Write note on Applications of Photolithography.	07	
