

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-IV(NEW) – EXAMINATION – SUMMER 2019****Subject Code:2143904****Date:20/05/2019****Subject Name: Synthesis of Nanomaterials-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.

		<b>MARKS</b>	
<b>Q.1</b>	(a) Define Resist and give example of EBL resist.	<b>03</b>	
	(b) Write applications of E-beam Lithography.	<b>04</b>	
	(c) Describe the Electron beam lithography.	<b>07</b>	
<b>Q.2</b>	(a) Write basic principles of PLD technique.	<b>03</b>	
	(b) Give Applications of PLD technique.	<b>04</b>	
	(c) Explain pulse laser deposition technique.	<b>07</b>	
<b>OR</b>			
<b>Q.3</b>	(c) Describe advantages and disadvantages of PLD.	<b>07</b>	
	(a) Write basic principle of E-beam lithography.	<b>03</b>	
	(b) Describe Vector Scan and Roaster Scan.	<b>04</b>	
<b>Q.3</b>	(c) Explain proximity effect in E-beam lithography.	<b>07</b>	
	<b>OR</b>		
	(a) What are secondary electrons in E-Beam Lithography?	<b>03</b>	
<b>Q.4</b>	(b) Explain beam focusing and alignment in EBL.	<b>04</b>	
	(c) Explain advantages and disadvantages of EBL.	<b>07</b>	
	(a) Differentiate between positive and negative resist.	<b>03</b>	
<b>Q.4</b>	(b) Write note on alignment of nano elements in hybrid nanostructures.	<b>04</b>	
	(c) Explain RF Plasma Chemical Method.	<b>07</b>	
	<b>OR</b>		
<b>Q.4</b>	(a) Give the basic principles of RF plasma chemical method.	<b>03</b>	
	(b) Describe Ion-beam for deposition.	<b>04</b>	
	(c) Write note on application of RF Plasma method.	<b>07</b>	
<b>Q.5</b>	(a) Write basic principle of CVD techniques.	<b>03</b>	
	(b) Give applications of CVD technique.	<b>04</b>	
	(c) Describe any one CVD technique.	<b>07</b>	
<b>OR</b>			
<b>Q.5</b>	(a) Write basic principle of PVD techniques.	<b>03</b>	
	(b) Give applications of PVD technique.	<b>04</b>	
	(c) Describe any one PVD techniques.	<b>07</b>	

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