Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2143904 **Date: 08/06/2017**

Subject Name: Synthesis of Nanomaterials-II

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		**Short Questions**	**14**
	1	Define Resist.	
	2	What is diffusion process?	
	3	Write any two examples of resists.	
	4	What is self narrowing process?	
	5	Define depositon technique.	
	6	Write full form of CVD.	
	7	Define PVD technique.	
	8	Give the full form of SPM.	
	9	Define low vacuum technique.	
	10	What is RF plasma? Define it.	
	11	Give the full form of PLD.	
	12	Define plasma.	
	13	Define lithography.	
	14	What is E-beam lithography?	
Q.2	**(a)**	Describe process of intraction electron with solids in E beam lithography.	**03**
	(b)	What are the secondry electron and diffusion processs in E-beam lithography? explain it.	**04**
	(c)	Explain proximity effect in E- beam lithography.	**07**
		OR	
	(c)	Describe alignment of nano element in hybrid nano structure.	**07**
Q.3	**(a)**	Explain role of vaccume in deposion.	**03**
	(b)	Explain the role of plasma source in deposition.	**04**
	(c)	Explain self narrowing atomic-beam pentography.	**07**
		OR	
Q.3	**(a)**	Explain controlling of thickness in deposition technique.	**03**
	(b)	Describe ion beam for deposition.	**04**
	(c)	Explain Physical vapour thin layer deposition technique.	**07**
Q.4	**(a)**	Write principles of PVD	**03**
	(b)	Write note on application of PVD in industries.	**04**
	(c)	Describe any one PVD techniques.	**07**
		OR	
Q.4	**(a)**	Give the basic principles of RF plasma chemical method.	**03**
	(b)	Write a notes on uses of CVD	**04**
	(c)	Describe any one CVD technique.	**07**
Q.5	**(a)**	Write basic principles of PLD technique.	**03**
	(b)	Give the applications of PLD technique.	**04**

	(c)	Describe the working of PLD	**07**
		OR	
Q.5	**(a)**	Write a note on Nano fabrication techniques.	**03**
	(b)	Describe SPM technique.	**04**
	(c)	Explain E- beam lithography.	**07**

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