Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III • EXAMINATION – WINTER • 2014

Subject Code: 2133903 Date: 01-01-2015

Subject Name: Synthesis of Nano-materials - I

Time: 02.30 pm - 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.**

Q.1	**(a)**	Classify the Nano-materials by shape and size.	**07**
	(b)	Explain physical and chemical properties of Nanomaterials.	**07**
Q.2	**(a)**	Describe safety issue and precaution for nanomaterials.	**07**
	(b)	Explain Top- down approach for Nanomaterials.	**07**
		OR	
	(b)	Write short note on Bottom- up approach.	**07**
Q.3	**(a)**	Explain Solid State Reaction.	**07**
	(b)	Write advantages and disadvantages of Solid State reaction method.	**07**
		OR	
Q.3	**(a)**	Describe Solid-gas reaction.	**07**
	(b)	Write advantages and disadvantages of Solid – gas process.	**07**
Q.4	**(a)**	Describe Chemical solution deposition technique.	**07**
	(b)	Write short note on Metal CVD.	**07**
		OR	
Q.4	**(a)**	Describe preparation of semiconductor by CVD technique.	**07**
	(b)	Write a short note on CVD for Oxide Materials.	**07**
Q.5	**(a)**	Explain semiconductor nanoparticle.	**07**
	(b)	Describe Nanotubes.	**07**
		OR	
Q.5	**(a)**	Write short note on Metal Nanomaterials.	**07**
	(b)	Explain mono layer and multilayer in thin films	**07**

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