Seat No.:	Enrolment No.
Seat No.:	Enrolment No

## **GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VIII • EXAMINATION – SUMMER 2013

U		Code: 182104 Date: 09/05/201 Name: Nano-materials & Technology (Departmental Elective-II)	3
•	e: 10	2:30 am TO 01:00 pm Total Marks:	<b>7</b> 0
insti u	1. 2.	Attempt all questions.  Make suitable assumptions wherever necessary.  Figures to the right indicate full marks.	
Q.1	(a) (b)	properties of nano structured materials.	07
Q.2	(a) (b)	production. Give the advantages of this method.	07
	(b)	011	07
Q.3	(a) (b)		07 07
Q.3	(a) (b)	What is carbon nanotube? Describe manufacturing of Nano Carbon Tube.	07
Q.4	(a)	production. Give the factors affecting mechanical alloying.	07
	(b)	Describe the hot isostatic pressing method for nanopowders consolidation.  OR	07
<b>Q.4</b>	(a)	õBottom-up technique is more convenient for nano fabricationö- explain and justify.	0
Q.4	(b)	•	07
Q.5	(a)	Critically compare the Conventional and Microwave sintering process for nanopowders consolidation.	0
	(b)	<u>*</u>	07
Q.5	(a)	Explain the working and applications of scanning probe microscopy in nano-	0′
	(b)	materials characterization.  What is transmission electron microscopy (TEM)? Explain the dark field and bright field images. Describe the information one can yield using TEM.	07

\*\*\*\*\*\*