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GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– III (New) EXAMINATION – WINTER 2019

Subject Code: 3133902

Date: 26/11/2019

Subject Name: Elements Of Nanoscience And Nanotechnology-I

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.

		Marks
Q.1	(a) Define mechanical properties of nanomaterial structure.	03
	(b) Write the notes on Crystal structure of graphite.	04
	(c) Explain in Brief what is carbon nanotube?	07
Q.2	(a) What is the application of Biomaterials in daily life?	03
	(b) Explain the Application of Nano-electronics.	04
	(c) Explain Quantum Dot in details.	07
	OR	
	(c) Discuss the role of nanotechnology in water treatment and environment control	07
Q.3	(a) What is the difference between Natural and Man Made nanomaterials.	03
	(b) Application of nanotechnology in Food and Agriculture Industries?	04
	(c) Explain brief semiconducting nanomaterials	07
	OR	
Q.3	(a) Define the magnetic properties of nano materials.	03
	(b) Give the Properties of CNTS.	04
	(c) Discus the various possible application of nanostructure silver, titanium oxide and zink oxide.	07
Q.4	(a) What are nanomaterial ? Do they exist in nature?	03
	(b) What is nano particle, nano tube and nano thin film.	04
	(c) List the properties of nanostructure material explain any two briefly.	07
	OR	
Q.4	(a) Explain in short composite and polymer nano material.	03
	(b) Explain how Carbon The Versatile Element in the Nanoworld.	04
	(c) Define step wise Rationale behind the Downsizing of the Materials.	07
Q.5	(a) Define optical properties of nano materials.	03
	(b) With different example show nano meter are how big and small.	04
	(c) What is Importance of nanomaterials in Defense and Space.	07
	OR	
Q.5	(a) Draw the clean structure of Fullerenes and Graphene.	03
	(b) Define Nano-medical uses.	04
	(c) Write the notes on Carbon Nanotubes Structure and Type of carbon Nanotubes Applications of CNTs	07
