

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code: 2153903

Date: 04/12/2019

Subject Name: Application of Nanotechnology

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	(a) Draw the design of electric double layer capacitor with necessary notion.	03
	(b) What do you mean by contaminant detection?	04
	(c) Explain: Precision farming and its benefits.	07
Q.2	(a) State Moore's law and explain it.	03
	(b) Write a short note on smart materials.	04
	(c) Give your views about nanotechnology in food packaging with necessary examples.	07
OR		
	(c) Explain role of nano fertilizers in agriculture and write down its advantages.	07
Q.3	(a) Define: nano catalysts and give its advantages.	03
	(b) List out various parameters associated with electrospinning technique for synthesis of nanofiber.	04
	(c) Explain photodynamic therapy for the treatment of cancer.	07
OR		
Q.3	(a) Define: Bio-MEMS	03
	(b) Write a short note on V2O5 battery in vicinity of nanotechnology.	04
	(c) Write down, how nanotechnology can be useful in the sector of agriculture and food industry.	07
Q.4	(a) Define: Thermochromics and Electrochromic materials	03
	(b) Write down name of various aspects in which nano textile have potential to change the properties of convention materials. Explain any one.	04
	(c) Short note on different type of Nano sensors.	07
OR		
Q.4	(a) Define: Zeolites in the vicinity of fertilizer	03
	(b) Write down advantages of nanowire based transistor.	04
	(c) Write a short note on nanoparticles in bone substitutes and dentistry	07
Q.5	(a) What do you mean by Tissue Engineering?	03
	(b) Explain: Color Cosmetic.	04
	(c) Write a short note on shampoos.	07
OR		
Q.5	(a) Define: self-cleaning catalyst.	03
	(b) Draw necessary diagram of Organic Electroluminescent Displays and explain its working.	04
	(c) Explain TiO ₂ based dispersion in sunscreen lotions for uv protection using titanium oxide	07
