Reg No.:_____ 00000MR403121802 Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Seventh Semester B.Tech Degree Examination (Regular and Supplementary), December 2020

Course Code: MR403

Course Name: Nanotechnology

Max. Marks: 100 Duration: 3 Hours

PART A

Answer all questions, each carries 5 marks. Marks

1		List the different types of Safety issues in the nanomaterials.	(5)
2		Elaborate the concept of atomic force microscopy.	(5)
3		Revise Thermal plasma processing of nanoscale powder.	(5)
4		What are the different modes of classification of nanomaterials?	(5)
5		List the major steps involved in CVD process.	(5)
6	(a)	Outline the importance of the nanomaterials.	(2)
	(b)	Define micro and nano fabrication techniques with uses.	(3)
7		Write a brief description about the nano wires.	(5)
8		List out the applications of Nano Sensors.	(5)

PART B

Answer any three full questions, each carries 10 marks.

9	(a)	Define organic and inorganic nanomaterials.	(2)
	(b)	Give any three inorganic nanomaterials.	(2)
	(c)	Give a brief explanation about these inorganic nanomaterials.	(6)
10		Discuss briefly the deposition of some oxide based nanocrystalline thin film via Sol-Gel dip coating method.	(10)
11		Discuss briefly about chemical vapour deposition (CVD).	(10)
12	a)	Explain how carbon nanotubes are formed.	(5)
	b)	Give a detail description about the uses of carbon nanotubes.	(5)
13	a)	Make a short note on:	
		1) Nano fluids	(5)
		2) Nano composites	(5)

PART C

Answer any two full questions, each carries 15 marks.

14	a)	Outline the micro and nano fabrication techniques in the nonmaterial production.	(8)
	b)	Prepare Photo lithography.	(5)
	c)	Applications of lithography	(2)
15	a)	Introduction to MEMS, NEMS and Nano electronics.	(9)
	b)	Recognize the functional process of the targeted drug delivery system.	(6)
16	a)	List out the applications, advantages and disadvantages of nanotechnology.	(10)
	b)	Outline the properties and applications of Dendrimers.	(5)
17	a)	Rewrite Photo resists method process, uses and applications.	.(9)
	b)	Briefly explain the parameters for a good photoresist.	(6)

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