

BBB-003-0491102 Seat No. _____

B. Sc. / M. Sc. (Applied Physics) (Sem. X) (CBCS) Examination

June / July - 2021

Nanotechnology and Environment : Paper - XIV (New Course)

Faculty Code: 003

Subject Code: 0491102

Time : $2\frac{1}{2}$ Hours] [Total Marks : 70

Instructions: (1) Attempt Any Five questions.

- (2) Numbers in the right margin indicate marks
- 1 Answer the following questions:

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- (1) What do you mean by Global warming?
- (2) What are nanocatalysts?
- (3) Which are the existing technologies used for energy harvesting?
- (4) Give any two importance of biodiversity
- (5) What are the advantages of single walled carbon nanotubes?
- (6) Explain Cytotoxicity of TiO2 nanoparticles in short.
- (7) Which are the non-point source pollutions?
- 2 Answer the following questions:

14

- (1) Which are the major pollutants in the environment?
- (2) Write in brief "Green Technology".
- (3) What are the effects of CeO2 nanoparticles?
- (4) What are Quantum dots? Give some examples.

 Write short notes on (i) Smog and Pollution (ii) Ozone layer depletion Explain the major benefits of green technology Answer the following questions: Explain the toxic effects of Iron oxide nanoparticles. Write a detailed note: Ecotoxicological Impacts of Nanomaterials. 		(6)	Name the compound which can be utilized as catalytic	
used for treatment of waste water. Answer the following questions: (1) Explain the approach of energy harvesting through solar roadways and wireless charging from electric vehicles. (2) Write a detailed note on Ocean acidification Answer the following questions: (1) Write short notes on (i) Smog and Pollution (ii) Ozone layer depletion (2) Explain the major benefits of green technology Answer the following questions: (1) Explain the toxic effects of Iron oxide nanoparticles. (2) Write a detailed note: Ecotoxicological Impacts of Nanomaterials. Answer the following questions: (1) Explain the applications of Quantum dots in detail. (2) Explain: Nanomaterial Interaction with Microbial Cell Components Answer the following questions: (1) Write a detailed note: Membrane fabrication using nanomaterials. (2) Write a note: Reactivity, Fate and Lifetime of Nanoparticles used for ground water remediation.			desulfurization	
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 7 Answer the following questions: (1) Write a detailed note: Membrane fabrication using nanomaterials. (2) Write a note: Reactivity, Fate and Lifetime of Nanoparticles used for ground water remediation. 		(2)	Explain: Nanomaterial Interaction with Microbial Cell	
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nanomaterials. (2) Write a note: Reactivity, Fate and Lifetime of Nanoparticles used for ground water remediation.	7	Answer the following questions:		
Nanoparticles used for ground water remediation.		(1)		
Nanoparticles used for ground water remediation.		(2)	Write a note: Reactivity, Fate and Lifetime of	
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(5) Why it is necessary for organisms to sequester iron in

a non-toxic form?

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8	Ansv	wer the following questions:	14
	(1)	Write a detailed note: Nanomaterial based adsorbents	
		for water and waste water treatments.	
	(2)	Write a note: Fullerene based membranes.	
9	Ansv	wer the following questions:	14
	(1)	Write a short note on Process emission control with	
		the approach of nanotechnology.	
	(2)	How Non-point source pollution can be controlled by	
		nanofiltration process	
10	Ansv	wer the following questions:	14
	(1)	(a) Write a short note on Process emission control	5
		with the approach of nanotechnology	
		(b) State some of the pressure driven membrane	2
		process used for treatment of waste water.	

(2) Describe the mechanism of microbial desulfurization