Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V(New) • EXAMINATION – WINTER 2016

Subject Code:2153905 Date:30/11/2016

Subject Name:Nanotechnology and Environment

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		**Short Questions**	**14**
	1	Define the photocatalyst.	
	2	Explain the desalination.	
	3	Define pulmonary clearance.	
	4	Write the meaning of membrane.	
	5	Give the different name of water purification technique.	
	6	Give the example of biological membrane.	
	7	Define health hazardous.	
	8	What is the pulmonary effect?	
	9	Define inhalation.	
	10	Give the example of photocatalyst for water purification.	
	11	Define oxidation and reduction.	
	12	Is the pH does effect on photo catalysis process?	
	13	Write the full name of MSF, MED.	
	14	Define deposition.	
Q.2	**(a)**	Define the oxidation of arsenic in water.	**03**
	(b)	Explain the chemistry of arsenic in water.	**04**
	(c)	Describe the human health hazard.	**07**
		OR	
	(c)	Draw the neat diagram for the health assessment and explain in detail.	**07**
Q.3	**(a)**	Explain the inhalation of insoluble solids.	**03**
	(b)	Write the short note on the pulmonary clearance of insoluble solids.	**04**
	(c)	What is the effect of CNT on the pulmonary system?	**07**
		OR	
Q.3	**(a)**	Explain the dose response evolution.	**03**
	(b)	Define the hazard assessment and exposure assessment.	**04**
	(c)	Write a short note on TiO2 as a semiconductor photocatalyst.	**07**
Q.4	**(a)**	Define MSF and MED process for water purification.	**03**
	(b)	Explain the kinetic mechanism of photo-catalysis.	**04**
	(c)	Describe the inorganic-organic membrane.	**07**
		OR	
Q.4	**(a)**	Explain aquaporin membrane.	**03**
	(b)	Write short note on reactive catalytic ceramic membrane.	**04**
	(c)	Give the explanation on zeolite coted ceramic membrane.	**07**
Q.5	**(a)**	Classify the pH effect on photo catalytic process.	**03**
	(b)	How oxygen, light intensity, dosages effect on photocatalytic process.	**04**
	(c)	Explain the photocatalytic mechanism.	**07**

OR

Q.5	**(a)**	Discuss the photocatalytic material degrade by light sources.	**03**
	(b)	How photocatalytic material degrade by pH of chemical.	**04**
	(c)	Write short note on biologically inspired membrane.	**07**

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