	Utech
Name:	
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Invigilator's Signature :	

CS/B.Sc (H)(BT/GE/MICRO-BIO/MOL-BIO)/SEM-5/EVB-503/2011-12 2011

ENVIRONMENTAL BIOTECHNOLOGY

Time Allotted: 3 Hours Full Marks: 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP - A

(Multiple Choice Type Questions)

- 1. Choose the correct alternatives for any ten of the following: $10 \times 1 = 10$
 - The process of accumulating higher and higher amounts of a toxic material such as PCBs within the body of any animal is called
 - a) Bioaccumulation
 - b) Biological amplification
 - c) Biological persistence
 - d) None of these.
 - ii) Which is a secondary pollutant?
 - a) PAN

b) MIC

c) DDT

d) PAH.

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iii)	Which one is the major constituent of acid rain?			
	a)	HClO ₄	b)	H_3PO_4
	c)	H_2SO_4	d)	H_3BO_3 .
iv)	Who first coined the term "Greenhouse effect"?			
	a)	J. Fourier	b)	Walter Munch
	c)	J. A. Arsonval	d)	La Jolle.
v)	is a large scale climatic phenomenon including global ecosystem?			
	a)	El nino	b)	Acid rain
	c)	Ozone hole	d)	None of these.
vi)	Bhopal gas tragedy occurred due to leakage of			
	a)	SO2	b)	DDT
	c)	MIC	d)	Dioxines.
vii)	Vermicomposting is done by			
	a)	Fungus	b)	Bacteria
	c)	Worms	d)	Animals.
viii)	The cold phase of El nino is called			
	a)	La nina	b)	Cyclone
	c)	Smog	d)	El nino.
ix)	71% of earth surface is covered with			
	a)	land	b)	air
	c)	water	d)	coal.
x)	Which of the following wastes cannot be decomposed by bacteria to form compost?			
	a)	Kitchen wastes		
	b) Plastic and polythene bags			
	c) Dead plants			
	d) Bodies of insects living in the soil.			

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- xi) Biological oxygen demand of is the least
 - a) Sewage
- b) Sea water
- c) Pure water
- d) Polluted water.
- xii) Compounds of cause Minamata disease.
 - a) mercury
- b) cadmium

c) cobalt

- d) fertilizers.
- xiii) Due to eutrophication
 - a) BOD increases
 - b) BOD decreases
 - c) Algae are destroyed
 - d) Water becomes less harmful.

GROUP - B

(Short Answer Type Questions)

Answer any three of the following.

 $3 \times 5 = 15$

- 2. What are the provisions of Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) ?
- 3. Write a short note on EPA.
- 4. What are the major chemical pollutants in a photochemical smog? What are PAN? Discuss the chemistry of formation of photochemical smog. 2 + 1 + 2
- 5. Discuss briefly the causes and effects of Deforestation and Desertification. $2\frac{1}{2}+2\frac{1}{2}$
- 6. Write short note on any *one* of the following:
 - a) Otec plants
 - b) Acid rain.
- 7. Write an account on biodegradation of Xenobiotics.

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GROUP - C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

- 8. What is the full form of IUCN? When and why was it established? What is the priority area of this organization? What is the role of IUCN in environmental protection? What do you mean by environmental law? 1 + 2 + 4 + 5 + 3
- 9. Define green energy. Characterize biohazard elements according to their impacts. What are the decibel and dobson units? $5 + 5 + 2\frac{1}{2} + 2\frac{1}{2}$
- 10. What is biochemical oxygen demand (BOD)? Why is BOD reduction necessary in waste water treatment? The atmosphere is the site and source of our weather. How is the atmosphere structured and how does it function to bring us the major features of our weather? Why do the bacterial colonies recovered from drinking water and grown on EMB media indicate fecal contamination of the water supply? Identify the specific roles chlorine plays in water purification. 2+2+5+3+3
- 11. Taking mercury as an example explain, what is biological detoxification. What are HAZMATs? Give examples. What can be the impact of DDT in the environment? Which chemical property of dioxin favours it to persist in the environment? Name one endocrine disrupting chemical. 6+2+4+2+1
- 12. What do you mean by oil spill? What are the cleaning up processes you would suggest? What are the effects of oil spills on nature? "Arsenic is a metalloid whose name conjures up images of murder." How can be microorganisms used to minimize this scenario? 2 + 4 + 5 + 4

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