Q.P. Code :28119

[Time: $2\frac{1}{2}$ Hours] **[Marks:60]**

Please check whether you have got the right question paper.

N.B: 1. All questions are compulsory.
2. All questions carry equal marks.
3. Draw neat labelled diagrams wherever necessary.

Q.1		Explain Microbiology of water, air and soil in detail.	**12**
		OR	
Q.1	**a)**	How do microbes help in nutrient cycling?	**06**
Q.1	**b)**	Explain the role of microorganism in natural system and artificial system.	**06**
Q.2		What do you mean by phytoremediation? Explain different techniques used in phytoremediation.	**12**
		OR	
Q.2	**a)**	Explain microbial degradation of Cellulose, xylan and Starch	**06**
Q.2	**b)**	Discuss bioremediation of metals.	**06**
Q.3		Describe different mode of entry of toxic substance, its breakdown and detoxification.	**12**
		OR	
Q.3	**a)**	Explain biotransformation of xenobiotics	**06**
Q.3	**b)**	What are biochemical aspects of arsenic, cadmium and lead?	**06**
Q.4		Discuss in detail concept and need of International agreements and treaties. What is Johanes-burg treaty?	**12**
		OR	
Q.4	**a)**	Explain causes and effects of acid rain.	**06**
Q.4	**b)**	Explain the causes responsible for ozone layer depletion. What is Montreal protocol.	**06**
Q.5		Write short notes on **any three :-**	**12**
	a)	Metagenomics	
	b)	Bioaugmentation	
	c)	Ruminant symbiosis	
	d)	Kyoto Protocol	
	e)	Forest (Conservation) Act, 1980	
	f)	Prebiotics and probiotics.	

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