



**Sample Paper - Entrance Test for Admission to Doctor of Philosophy**

**Discipline: Applied Sciences (Microbiology / Biotechnology)**

**Max Time: 3 Hours**

**Total Marks: 100**

**There are two sections each of 50 Marks**

<b>Section 1: Microbiology/Biotechnology Descriptive Questions</b>		<b>Marks</b>
1.	a) Define mutation and mention the experiment that was carried out to prove spontaneous mutation with diagram, with photo reactivation repair mechanism.	[15]
	<b>OR</b>	[15]
2.	a) Discuss the Waste water treatment in detail with specification of sewage water	
	<b>OR</b>	
3.	b) Write a note on in situ Bioremediation of xenobiotics.	[20]
	<b>OR</b>	[20]
3.	b) Write a note on biodegradation of plastic and aromatic hydrocarbons.	
	<b>OR</b>	
3.	c) Write a note on Bio safety level 1 and 2.	[15]
	<b>OR</b>	[15]
3.	c) Write a note on Hazards of Biomedical waste and treatment and disposal of the same.	

<b>Section 2: Research Methodology Descriptive Questions</b>		
1.	a) What is research methodology; Write a note on: Ethics in research and explain when qualitative research methodology is appropriate?	[25]
	<b>OR</b>	[25]
2.	a) Describe in detail: Selection of research topic and Briefly describe standards of scientific paper.	
	<b>OR</b>	
2.	b) Explain simple factorial design and its importance, and Write a note on graphical representation of data.	[25]
	<b>OR</b>	[25]
2.	b) Describe the major components of the research design.	