

Principle paper BT 102 Biostatistics and Environmental Biotechnology

Section I

Unit 1

- 1.1. Bio statistics: Definition and scope, collection, classification.
- 1.2. tabulation of data and its graphical and diagrammatic presentation
- 1.3. Measures of central tendency, dispersion and standard error;
- 1.4. Probability distributions: binomial, poisson and normal distribution

Unit 2

- 2.1. Statistical significance: Hypothesis testing, types of error, level of significance
- 2.2. Student's t test, F test and Chi square goodness of fit.
- 2.3. Simple linear regression and correlation analysis
- 2.4. Non parametric tests Rank test, F-max test, Rank test, F-max test,

Section II

Unit 3

- 3.1. Biotechnology of waster water management: Primary, secondary and tertiary waster water treatments, advance treatments Management of solid waste
- 3.2. Biodegradation of various xenobiotec compounds
- 3.3. Bioremediation: Principle and applications.
- 3.4. Phytoremediation Principle and applications

Unit 4

- 4.1. Biofertilizers: types and applications.
- 4.2. Concept of bio control of pest and pathogen: microbial insecticides, siderophore
- 4.3. Biofuels: Gasohol, Bioconversion of agriculture waste, Hydrogen and electricity.
- 4.4. Bioleaching: Principles and applications.

References

1. **Zar**, *Biostatistical Analysis*.
2. Bernard R. Glick and Jack J. Pasternak, *Molecular biotechnology: principles and application of Recombinant DNA*, ASM press.
3. Bruce E. Rittmann and Perry L. Mccarty, *Environemntal Biotechnology: Principles and application*, McGraw- Hill International
4. Christson, *Manual of Environmental Microbiology*, ASM press
5. Eugenia J. Olguin, Gloria Sanchez and Elizabeth Hernandez, *Environmental Biotechnology and Cleaner Bioprocess*, Taylor and Francis
6. Martine Alexander, *Biodegrdation and Bioremediation*
7. Peter Morris (Editor), Riki Therivel, *Methods of Environmental Impact Assessment*