Elective paper BT 304 Microbial ecology

Section I

Unit 1

1.1. Microorganisms in extreme environments
1.2. Environmental Determinants that Govern Extreme environments
1.3. Extremes of pH & temperature,salinity
1.4. Hydrostatic pressure, nutrient limitation

Unit **2**

2.1. Physiology, Morphology of Microbial Biofilms
2.2. Microbial biofilm formed in natural environment.
2.3. Mechanism of microbial adherence.
2.4. Beneficial & harmful role of biofilms

Section II

Unit 3

3.1. Techniques to study microbial ecology: Insitu and advance microscopy use of physiological methods including measurement of microbia
3.2. carbon respiration, use of radio labeled tracers , enzyme assays and immunoassys
3.3. Enzyme assays and immunoassays. Analysis on the basis of nuclic acid based techniques.
3.4. Metagenomics : study of uncultivable microorganisms.

Unit 4

4.1. Methods for studying soil organisms: Direct microscopy of soil population (counting by direct microscopy
4.2. Calculation of Bio-volume and Biomass Measurement by chemical techniques
4.3. ATP measurement of Respiration
4.4. Soil enzymes- measurement