

Part B- Content of the Course

Total No. of Lectures - Tutorials-Practical (in hours per week): L-T-P:		
Unit	Topics	No. of Lectures
1	Biochemistry of Microbes: Chemical composition of cell, molecules of living systems, pH and p _k , Buffers. Structure and classification of carbohydrates, lipids, proteins, DNA and RNA.	12
2	Enzymes and their classification, Enzyme kinetics, allosteric enzymes, Michaelis Menten equation, coenzyme, isozyme, enzyme inhibition and regulation. Vitamins: classification and function.	12
3	Microbial growth, phases of growth, conditions of growth, measurement of growth, growth curves, generation time, Effect of temperature, pH, salinity and oxygen on growth. Bacterial sporulation and germination, binary fission.	12
4	Biosynthesis of bacterial cell wall, Difference in eubacterial and archaeobacterial cell wall, transport across membrane, Mechanism of flagellar and cilliary motion and its function. Physiological types of bacteria: Thermophiles, Halophiles, Acidophiles, Psychrophiles, Barophiles. Quorum sensing in bacteria	12
5	Microbial photosynthesis, photosynthetic apparatus in pro and eukaryotes, anoxygenic and oxygenic photosynthesis (Cyanobacteria and Algae). Light and dark reactions. Microbial respiration: Anaerobic and Aerobic mode of respiration, glycolysis, homo and hetero fermentative pathways. Energy transduction in archaeobacterial membrane	12
Keywords/Tags: Microbial biochemistry, physiology.		