

CORE COURSE IV - MICROBIAL BIOTECHNOLOGY

UNIT I:

Definition of Biotechnology – concept – history – achievements and products.

UNIT II:

Industrial Microbiology: Bioreactors Microbial insecticides, Recombinant proteins.

Enzyme production – problems, application – immobilization of cells and enzymes. Vaccines and their production, Biofertilizers.

UNIT III:

Biotechnological potential of micro algae – food – fuel production – pharmaceutical valuable compounds of micro algae. SCP, Mycoprotein.

UNIT IV:

Environmental release – monitoring of genetically engineered organisms, Intellectual properties right.

Bioremediation, Biosorption, Environmental clean-up by microbes, degradation of xenobiotics.

UNIT V:

Bio control of insects – microbes as food in feed for plants and animals. Pollution and waste recycling, microbial mining (bioleaching) Environmental protection agencies, Rheosummit.

REFERENCE:

1. Molecular Biotechnology by Iick and Pasternack. ASM press. 1994.
2. Desmond, S.T., Nicholl. 1994. AN introduction to Genetic Engineering Cambridge press.
3. Old R.W. and Primrose S.B. 1994 Principles of Gene Manipulation. 4th edition. Blackwell scientific publication London.
4. Cresswell RC. Ress TAV and Stah, H 1989. Algal and Cyanobacterial Biotechnology. Longman Scientific and Technical, NewYork.
5. P.Prave, P.Faust, V. Sitting, word sukatasch D. 1987 Fundamentals of Biotechnology. VCH verlasgetell Schafor MBH, Weinhkeim.