

Paper – III: Microbial Technology

Unit – I

Isolation, preservation and maintenance of industrial microorganisms, microbial growth and death kinetics, media for industrial fermentation, air and media sterilization.

Unit – II

Types of fermentation processes – analysis of batch, fed – batch and continuous bioreactors, stability and microbial reactors, analysis of mixed microbial populations.

Unit – III

Specialized bioreactors (pulse, fluidized, photobioreactors etc.) Environmental control of bioreactors. Downstream processing, whole cell immobilization and industrial applications.

Unit – IV

Industrial production of chemicals – alcohol (ethanol), acids (citric acid and gluconic) solvents (glycerol, acetone, butanol), antibiotics (Penicillin, Streptomycin, Tetracycline), amino acids (Lysine, Glutamic acid), single cell protein.

Unit – V

Introduction to food technology – elementary idea of canning and packing, sterilization and pasteurization of food products.

