

MICROBIOLOGY AND IMMUNOLOGY

UNIT I

Diversity of Microorganisms – Salient features of Bacteria, Virus, Phages, Algae, Fungi and Protozoan. Industrial applications of microorganisms in various fields.

UNIT II

Structure, Life history and Genomic Biology of E.coli, Helicobacter, Salmonella, Influenza, Polio, Poxvirus, Diatoms, Chlorella, Spirulina, Aspergillus, Penicillium, Plasmodium, Entamoeba.

UNIT III

Biological control of microorganisms – Antimicrobial agents in therapy – Mode of action and side effects – Mechanism of drug resistance - Symbiotic and Asymbiotic N₂ fixation – Bio fertilizer.

UNIT IV

Types of Immunity – Lymphoid organs – Lymphocytes –Cell maturation and differentiation – Immune Response - Structure and Biological properties of Immunoglobulin.

UNIT V

Immunological techniques: Precipitation test – Immunodiffusion – Immunoelectrophoresis – Immunofluorescence – HLA typing – ELISA – RIA.

Text Books

1. Power C.B. and H.F. Dagainawala., *General Microbiology*, Himalaya Publishing House, 1987.
2. M.J. Pelczar, Jr., E.C.S. Chang and N.R. Krieg, *Microbiology*, McGraw Hill Company, Newyork, 1995.
3. Schlegel, H.G., *General Microbiology*, Cambridge Univ. Press, 1993.
4. Dulsy Fatima, and N.Arumugam, *Immunology*, Saras publications, 1998.
5. Joshi, K.R. and Osamo, N.O., *Immunology*, Agro Botanical publishers, India, 1994.

Reference Books

1. M.J. Pelczar, Jr., E.C.S. Chang and N.R. Krieg, *Microbiology-concepts and applications*, McGraw Hill Company, 1993.
2. Tauro, P.K.K.Kapoor and K.S.Yadav, *An Introduction to Microbiology*,Wiley Eastern ltd., 1993.
3. *Basic and Practical Microbiology* – Ronald M. Atlas, Mac.Milleen Company,Newyork, 1986.
4. Shetty, N., *Immunology*, Wiley Eastern Ltd., 1997.
5. Janis Kubey, *Immunology*, W.H.Freeman and Co.,New York, 2002.
6. I.M. Roitt, J. Brostoff and D.K. Male, *Immunology*, Gower medical publishing, London, 1993.