

CC – XI - MICROBIOLOGY

Unit 1

Historical outline of Microbiology - the scope, characterization and classification of Microorganisms, Bacteria, Viruses.

Unit 2

Bacterial Morphology, cell structure, nutrition, respiration and reproduction.

Viruses and phages – Morphology & reproduction. Yeast Morphology, Physiology & Multiplication. Economic importance of Bacteria & Yeast.

Unit 3

Soil Microbiology: common soil microflora – Bacteria, Fungi and Actinomycetes.

Food Microbiology:- Microbial spoilage of foods, canned foods, food preservation, Food poisoning.

Unit 4

Agricultural Microbiology:- N₂ – fixing bacteria, Phosphate solubilization, Mycorrhizae. Biological Control – control of pests and diseases. Medical Microbiology: Mycoses, Chemotherapeutic agents and Chemotherapy

Unit 5

Antibiotics – Antibiotic and mode of action with reference to Penicillin, streptomycin, erythromycin, Bacitracin methods of sterilization, Pasteurization and maintenance of microbial culture.

Références :

MICROBIOLOGY

- Balasubramanian, A. (1977) : Nunnuyirigal (Microbes)
Tamilnadu Text Book Society, Madras-373pp.,
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Oxford & IBH Publishing Co., Ltd.,
New Delhi, Bombay, Calcutta-289pp.,
- Chandrasekaran, P. (1993) : Nunnuyiriyal (In Tamil)
T.K. Pathippagam, Pudukkottai-328pp.
- Rangaswami, G. &
D.J. Bhagyarai (1993) : Agricultural Microbiology (2nd Edn.)
Prentice Hall of India(P)Ltd., New Delhi-422pp.,
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- Biswas, S.B. & Anita Biswas (1990) : An Introduction to Viruses
Vikas Publishing House (P) Ltd., New Delhi-292pp.,
- Aneja, K.R. (1993) : Experiments in Microbiology, Plant Pathology & Tissue Culture
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- Pelczar, M.J., Chan, E.C.S., & Krieg, N.P. (1993) : Microbiology
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Cambridge University Press. U.K. -234pp.,
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Saras Publications, Nagercoil, Tamilnadu-495pp.,
- Sullia, S.P. & Shantaram, S. (1998) : General Microbiology
Oxford & IBH Publishers(P)Ltd., New Delhi-523pp.,
- Dubey, R.C. & Maheshwari, D.K. (1999) : A Text Book of Microbiology
S. Chand & Co., New Delhi-682pp.,
- Subba Rao, N.S. (1999) : Soil Microbiology-(4th Edition)
Oxford & IBH Publishing Co., (P)Ltd., New Delhi-424pp.,

Practical :

1. Measurement of microorganisms using micrometer.
2. Media Preparation – Sterilization procedure
3. Isolation of microorganisms from a water soil and plants.
4. Isolation of microorganisms from spoiled foods and vegetables.
5. Gram staining of Bacteria.
6. Antibiotic bioassay.