VML-103 Fundamentals of Microbiology

Objective - To impart knowledge of the basic principles of bacteriology, sterilization, staining method and microscope

UNIT - 1 Introductory microbiology: Introduction to and brief of microbiology, scope and relevance of microbiology, modern developments in microbiology, explain the types and methods of sterilization.

Microscopes: use and types of microscopes; bright microscope, field microscopy, dark field microscopy, phase contrast microscopy, electron microscopy, principles and uses of microbiology equipment and instruments.

UNIT-2 Morphology and structure of microorganisms: Morphology and structure of bacteria, fungi, actinomycete and algae etc., microscopic examination of microorganisms.

Culture Media & Methods: Introduction, types of media, selective and differential media, preparation of culture media, culture methods: spread plates, pour plates, separation of pure cultures.

UNIT-3 Stains used in microbiology: Introduction to stains; importance of stain in microbiology; types of stains in detailed giving example-simple stain differential stain, negative stain, impregnation method; special staining for certain bacteria, bacterial spores, parasites and fungi; principle, procedure, application and result, interpretation of gram staining and Ziehl Nielsen staining.

Recommended Books:

- [Burton's microbiology for the health science, the science of laboratory diagnosis, C.P Baveja, P.B godkar "A Textbook of Basic and Applied Microbiology" by K R Aneja]
- Prescott's Microbiology: Willey, Joanne, Sherwood