

## BS23MJ1MB2

### Major 2 :Principle techniques of Microbiology

- A. Microbiology Good Laboratory Practices And Biosafety
- B. Introduction To Various Instruments Used In Microbiology Laboratory:Principle, design and Application of:

- a) Balances
- b) Light Microscope – Simple And Compound Microscope,
- c) Sterilizers: Hot Air Oven, Autoclave, Water bath
- d) UV Chamber
- e) Laminar Air Flow
- f) Biological Safety Cabinets,
- g) Bacteriological Filters
- h) Refrigerator for Preservation
- i) Incubator, BOD incubator
- j) pH meter
- k) Centrifuge

- C. Preparation Of nutrient agar slant and nutrient broth
- D. Preservation of culture on nutrient agar slant
- E. Study of pH adjustment of nutrient broth
- F. Demonstration of the presence of microflora in the environment by exposing nutrient agar plates to air.
- G. Permanent Slide/Photographs Of: Bacillus, Staphylococcus, Yeast, Rhizopus, Gram Negative Short Rods, Paramecium, Spirogyra, Euglena, Tape Worm
- H. Preparation Of Molar Solutions, Normality Solutions, Percent solution, Normal Saline

#### I. Wet and dry mounting techniques of light microscope

- a) Simple Staining: Positive Monochrome
- b) Negative Staining
- c) Gram Staining Of Bacteria
- d) Gram Staining Of Yeast
- e) Acid Fast Staining
- f) Spirochete Staining

g) Mounting Of Mold :*Mucor, Rhizopus, Aspergillus*

J. Permanent Slide/Photographs Of: *Bacillus, Staphylococcus, Yeast, Rhizopus, Aspergillus, Penicillium, Gram Negative Short Rods, Paramecium, Spirogyra, Euglena, Tape Worm*

- K. Preparation Of Molar Solutions, Normality Solutions, Percent solution, Normal Saline

## **Reference Books**

1. Prescott, M.J., Harley, J.P. and Klein, D.A. Microbiology. 5th Edition WCB Mc GrawHill, New York, (2002).
2. Tortora, G.J., Funke, B.R. and Case, C.L. Microbiology : An Introduction. Pearson Education, Singapore, (2004).
3. Alcom, I.E. Fundamentals of Microbiology. VI Edition, Jones and Bartlett Publishers. Sudbury. Massachusetts, (2001).
4. Black J.G. Microbiology-Principles and Explorations. John Wiley & Sons Inc. New York, (2002).
5. Tom Besty, D.C Jim Koegh. Microbiology Demystified McGRAW-HILL.