UNIT - 1: Principles, working and uses of following sterilizers
   (i) Hot air oven
   (ii) Steam sterilizer
   (iii) Insipissator
   (iv) Bacteriological filters

UNIT - 2: Preparation and sterilization of glasswares and media, disposals of media and cultures.
   2.2 Study of permanent slides of bacteria and fungi
      (i) Gram Positive bacteria: Staphylococci group, Streptococci group, Bacillus species, spiral forms.
      (ii) Gram Negative bacteria: E.coli, Pseudomonas species
      (iii) Common fungi: Mucor, Rhizopus, Aspergillus, Penicillium, Alternaria, Curvularia and Neurospora.
      (iv) Yeast

UNIT - 3: Microscopic observation of various morphological forms of bacteria by
   (i) Simple staining
   (ii) Negative staining
   (iii) Differential Gram staining

UNIT - 4: Microscopic observation of various cellular organelles of bacteria by special staining techniques.
   (i) Spirochetes staining - Fontana's staining
   (ii) Spore staining - Schiffers method
   (iii) Cell wall staining - Webb's method
   (iv) Capsule staining - Hiss's method

UNIT - 5: Preparation of liquid and solid culture media
   (i) N-broth and N-agar
   (ii) MacConkey's agar, EMB agar, WB agar, SS agar, TSI agar slants (selective and differential)
   (iii) Blood agar (enriched medium)

UNIT - 6.1 Isolation and cultivation of bacteria by streak plate and pour plate method.
   6.2 Enumeration of bacteria by viable count techniques (serial dilution and plating)
   6.3 Enumeration of bacteria by microscopic method (Total count of yeast by haemocytometer)

REFERENCE BOOKS: