

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT.

F.Y. B.SC.

MEDICAL TECHNOLOGY

Paper - I

Fundamentals of Medical Technology

(Effective from 1999 2000)

- 1. Introduction to Various branches of Medical Technology :**
Microbiology, Bacteriology, Mycology, Pathology, Parasitology, Hematology, Clinical Biochemistry, Immunology, Serology, Medical Microbiology, Virology, Histopathology, Nuclear Medicines, Radiation Biology, Genetics, Human Anatomy, Human Physiology.
- 2. Introduction, Working knowledge and use of instruments and equipment used in Medical Technology :**
Autoclave, Hot air Oven, Centrifuge, incubator, Autorii, P H meter, colorimeter, Colony counter, water bath, Single pan balance, autopipette, various types of syringes and needles.
- 3 General Technique :**
Laboratory hazards, first aids, personal Safety, cleanliness laboratory, storage of chemicals and reagents, production of distilled water, treatment and disposal of infected Materials.
- 4. Fundamental chemistry:**
Solute, Solvent, and solution (Standard, Saturated Stock solution and working solution).Strength of solution, Molar and normal solution Acids and bases PH and Buffers indicators units and calculation
- 5. Various reagents, media, and anticoagulants used in Medical Technology Media :**
Nutrient broth, Nutrient agar, Mac Conkey agar Anticoagulants :EDTA. Oxalate, trisodium citrate, Hce Quali
- 6. Quality control and laboratory Ethics. Quality control :**
General approach to quality control Specimen collection and processing', errors in processing Lab records Quality controls in haematology lab, blood bank lab, Microbiology lab, parasitology lab, serology lab,clinical pathology lab, clinical biochemistry lab.Laboratory ethics : Code of conduct for medical lab, personnel

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT.

F.Y. B.SC.

MEDICAL TECHNOLOGY

PRACTICALS OF PAPER I & II

1. Organization of Medical Technology laboratory
2. Laboratory hazards, first-aid and safety measure
3. Basic laboratory glassware, equipment and their Maintenance
4. Laboratory chemicals, use and storage
5. Microscopy (monocular, bionocular, dark field, bright field)
6. Staining Techniques ;
 - a. Simple staining, negative staining gram staining, acid Fast staining
 - b. Hanging drop method (for motility)
7. Specimens for laboratory examination, labelling, collection preparation and disposal of some important specimens,
8. Preparation of standard solution, buffers and various reagents
9. Preparation of anticoagulants. EDTA, Oxalate, Citrate,
10. Use of important instruments-sterilization by autoclave hot air oven
11. Use of UV rays for sterilization.
12. Fumigation process-formaldehyde vapour, and ethylene oxide.
13. Use of antiseptics and disinfectants.
14. Use of themometer, stethoscope, syringe, needles, etc.
15. PH adjustment ..by paper strip, by comparator and by electric PH. meter.
16. Maintenance and preservation of biological materials, bacterial cultures, vaccines, blood group sera.
17. Maintenance of aseptic technique.
18. Microbiological examination of air (2 days practical)
19. Microbiological examination of water (drinking) (2 work jays,
20. Microbiddogical examination of food (2 days work)

REFERENCE BOOKS

1. Clinical pathology and bacteriology (for students and practitioners) by K.N. Sachdev (1991),
Pub :Jaupee Brothers
2. Microbiology .-by Anna K. Joshua (1988) 4th edi. Pub : Popular Book Dept.Medical lab
techniques for routine diagnostic tests (1988) .
pub : NCERT - DELHI (vol .1 to IX)
4. Medical lab teachnology by Dr. Ramnik Sood (1991) •- pub. Jaypee
Brothers New Delhi
5. A manual of medical lab technology -A.H. patel -pub. Navneet Prakashan Ltd. Bombay
(1994)o,Medical.Lab Technology (A procedure manual for routine diagnostic tests (vol.I)
(second reprint -1989)by K.L.MuKharaji (Ed.)
-pub : Tata McGraw Hill publishing Company Ltd .New Deli
7. Laboratory Manual in General Microbiology N.Kannan -pub :Pelani
Paramount Publications Palani -624 602
8. Environmental Aspects of Microbiology by J.C. Danial
pub : Bright Sun Publications, Chennai-600 092
9. Microbiology (5th ed.) by Pelczar,Chan and Krieg
10. Microbiology (International Edition) Concepts and . Application by Pelczar, Chan and Krieg