

Syllabus for Technical Assistant (Lab)-A to Technical Assistant (Lab)-B-MFCP

MICROBIOLOGY

General Microbiology - Sterilization and Disinfection, including autoclave, hot air oven, inspissator, ETO, plasma sterilisation and gamma irradiation. Disinfectants- categories, spectrum of action and use in different circumstances. Culture Media- Selective, enriched, enrichment, differential media and media for specific bacteria. Fungal culture media, tissue culture media for viruses. Microscopy – Light, Phase contrast, fluorescent and Electron Microscopy. Simple stains, differential staining, fungal staining techniques. Sensitivity testing methods, MIC, automation in susceptibility testing, e-test. Methods of inoculating samples, bacterial suspension, isolation of pure culture, stocking strains. Incubators, refrigerators, Biosafety cabinets, laminar flow cabinets.

Immunology – Basics of immunology. Antigen, antibody, Ag-Ab reactions and serology, Hypersensitivity reactions, autoimmunity, immune deficiency, complement. Principles of testing – ELISA, agglutination, precipitation, ELFA, Chemiluminescence, automation in serology. Equipments in the serology lab- centrifuges, vortex mixers, water bath and deep freezers, lab refrigerator. 3.

Mycology – Basics of fungal culture and microscopic techniques in mycology. Identification of yeasts and moulds. Fungal susceptibility testing

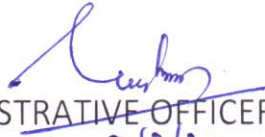
Bacteriology – Laboratory identification of bacteria, biochemical testing – principles. Individual bacteria- Staphylococci, streptococci, gram positive rods, gram negative bacilli- E.coli, other coliforms, non-fermenters, fastidious bacilli- Brucella, spirochaetes, Chlamydia, mycoplasma. Diseases associated with bacteria and their lab diagnosis, like Meningitis, UTI, Pneumonia, sepsis. Tuberculosis – processing of specimens like CSF, sputum and automation in mycobacterial diagnosis

Virology – General properties of viruses, Culture methods, methods to demonstrate viruses and their identification.

Molecular diagnostics – PCR- conventional, RTPCR, Sanger sequencing and basics of genomic sequencing.

Quality control in the microbiology lab – internal and external quality assurance programmes.

Biosafety – Safety of laboratory personnel, personal protective equipment, levels of biosafety, vaccination. Biomedical waste disposal, disposal of liquid waste.


ADMINISTRATIVE OFFICER Gr.I (I/C)
7/3/24