



MGM INSTITUTE OF HEALTH SCIENCES

(Deemed University u/s 3 of UGC Act, 1956)

Grade 'A' Accredited by NAAC

PhD CET Syllabus

Paper II - Subject Specific Test Microbiology

Contains	Topics
Details of General Microbiology	Historical aspects, Classification of living beings, Microscopy
	Study of bacteria, Structure and composition of bacterial cell, Growth and multiplication of bacteria ,
	Sterilization & Disinfection,
	Culture media & Culture methods, Biochemical reactions,
	Antibiotic sensitivity test, Antimicrobial Agents & Minimisation of drug resistance
	Universal safety precautions & Hospital waste Management
	Hospital acquired infections. Infection control committee
	Bacterial genetics , Genetic engineering and Molecular techniques
Details of Immunology and Serology.	Infection, Immunity, Vaccines and immunization schedule
	Antigen, Antibodies, Complement
	Serological reactions –Precipitation, Agglutination, CFT, Opsonisation, neutralisation, IFA, RIA, ELISA
	Structure and functions of immune system
	Hypersensitivity
	Autoimmunity
	Transplantation immunity, Tumour immunity

Systemic Bacteriology

Contains	Topics
Gram Positive Organisms	Staphylococcus
	Streptococcus, Pneumococcus
	Corynebacterium, Bacillus
Anaerobes and Mycobacteria	Clostridium- Perfringens, Tetani, Botulinum, Difficile
	Non sporing anaerobes
	Mycobacterium tuberculosis
	M. leprae, Atypical mycobacteria
Gram Negative Organisms	Gonococcus, Meningococcus
	E.Coli, Klebsiella, Proteus
	Salmonella, Shigella,
	Vibrio
	Pseudomonas , Burkholderia, Stenotrophomonas, Pasteurella, Yersinia
	Haemophilus, Bordetella and Brucella
Spirochetes & Miscellaneous	Spirochaetes. T. Pallidum, Leptospira, Borrelia
	Rickettsiae, Chlamydiae, Campylobacter, Helicobacter
	Actinomycetes and Nocardia
	Mycoplasma , legionella, Listeria
	Miscellaneous Bacteria

Virology, Mycology & Parasitology

Contains	Topics
Details of Virology	General Properties of viruses
	Outline of diagnosis of viral diseases, Virus host interactions
	Bacteriophage, Pox viruses.
	Herpes viruses, Adeno viruses
	Picorna viruses, Orthomyxoviruses
	Paramyxoviruses, Corona virus (all details about Pandemic 2019)
	Arboviruses, Rhabdoviruses
	Hepatitis viruses
	Human immunodeficiency virus and AIDS
	Oncogenic viruses
Details of Mycology	Historical aspects
	Classification of fungal diseases
	Fungi causing superficial infection
	Fungi causing subcutaneous mycoses
	Fungi causing systemic infection
	Fungi causing opportunistic infection
Details of Protozoology	E. histolytica and other amoebae
	Giardia, Trichomonas,
	Leishmaniadonovani and Trypanosomes
	Malarial Parasites , Babesia
	Toxoplasma gondii , Sarcocystis
Details of Helminthology	Introduction, General characters, classification

	Nematodes
	Cestodes
	Trematodes
	System wise Parasitic Infections.
	Parasitic Diseases In Aids
	Diagnostic Procedures Concentration Techniques.

Applied Microbiology & Molecular Biology

Contains	Topics
Quality management & Quality Control in Microbiology	Total Quality Management including Quality Assurance & Quality Control, SOP writing
	Accreditation of Medical laboratory
	Laboratory Safety, Biomedical waste disposal
Molecular Biology and recent advances in Diagnostic Microbiology	
Applied Microbiology, Epidemiological markers, Biological Warfare, Zoonotic diseases	
Causative agents and Lab Diagnosis of various common clinical conditions- UTI, URTI, LRTI, Blood stream infections, IE, PUO, Diarrhea, dysentery, gastroenteritis, meningitis	
Bacteriology of food, water and Air	
Vehicles and vectors in Medical microbiology	