

PAPER II: GENERAL & CLINICAL MICROBIOLOGY

MUST KNOW:

UNIT 1: HISTORY & CLASSIFICATION

History and Pioneers in Microbiology: Contributions of Antony Van Leeuwenhoek, Louis Pasteur, Joseph Lister, Robert Koch (Koch's Postulates)

Bacterial Taxonomy: Nomenclature and classification of microbes (in brief)

UNIT 2: MORPHOLOGY

Microscopy, Stained preparation, Size & Shape

Morphology of bacteria: Structures of a bacterial cell and their functions

Physiology of Bacteria: Nutrition, Gaseous requirement, temperature requirement and other growth requirements

UNIT 3: GENERAL MICROBIOLOGY

Sterilization and disinfection

Culture media

Culture methods

Identification of Bacteria: biochemical tests

Antibiotic sensitivity testing

UNIT 4: IMMUNOLOGY

Immunology

Infection, Immunity, Antigen, Antibody,

Antigen-Antibody reactions (General features, Precipitation, Agglutination, Complement fixation test, Immunofluorescence, Radio Immunoassay, ELISA),

Complement system,

Hypersensitivity

UNIT 5: SYSTEMIC MICROBIOLOGY

Staphylococcus, Streptococcus, Pneumococcus, Neisseria, Corynebacteria, Clostridia, Coliforms, Proteus, Salmonella, Shigella, Vibrio, Pseudomonas, Haemophilus, *Mycobacteria*, *Spirochaetes*

UNIT 6: MYCOLOGY

Morphological Classification of fungi

Laboratory diagnosis of Fungal Infections

UNIT 7: PARASITOLOGY

Morphology, life cycle, laboratory diagnosis of following parasites:

Protozoa:

Entamoeba, Giardia, Trichomonas, Leishmania, Plasmodium

Helminthology

Cestodes:

Taenia, Echinococcus

Nematodes:

Trichuris, Ancylostoma,

Ascaris, Enterobius, Wuchereria bancrofti(filaria)

UNIT 8: VIROLOGY

General Properties of Virus: Morphology, Replication & cultivation of viruses

Disease caused, Laboratory diagnosis & prevention of

Hepatitis viruses

HIV

UNIT 9: CLINICAL / APPLIED MICROBIOLOGY

Collection, Transportation & Culture of

Sputum and other respiratory specimens

Urine

Faeces

Blood

CSF and other body fluids

Hospital-acquired infections & Laboratory Hazards

Disposal of Biomedical waste

Quality control in Diagnostic Microbiology

Automation in Diagnostic Microbiology