

MICROBIOLOGY - PAPER 1

- * *Staphylococcus aureus*: Morphology, culture, character, biochemical properties, virulence factors, diseases caused by it, Lab diagnosis.
- Elastase & its significance
- * Methicillin - Resistant *Staphylococcus aureus* (MRSA).
- * Coagulase test Principle.
- * *Streptococcus pyogenes*: Non-suppurative complications caused, Toxins & Enzymes produced, Lab diagnosis
- Streptococci - B
- Rheumatic fever - Disease mechanism & diagnosis.
- * Antistreptolysin 'O' test
- Pneumococcal meningitis: Lab diagnosis
- Causes of Pyogenic Meningitis
- Meningococcal meningitis: Lab diagnosis
- * *Neisseria meningitidis*: pathogenesis, clinical features, lab diagnosis, culture, morphology, other lesions produced.
- * Non-Gonococcal urethritis (NGU).
- * *Corynebacterium diphtheriae*: morphology, pathogenicity, lab diagnosis, Immunoprophylaxis, Elek's test.

- * Hide porters disease / Cutaneous Anthrax
- * Malignant pustule
- * Wool Sorters disease (Pulmonary Anthrax).
- * Gas gangrene - Pathogenesis, Lab diagnosis,
- * Tetanus - Pathogenesis, Clinical features, Lab diagnosis,
Immunoprophylaxis
- * Naglers reaction
- * Pseudomembranous Enterocolitis :- Cause, Lab diagnosis, Rx.
- * Non-sporing Anaerobes
- * Escherichia coli :- Types, Disease caused,
- * Significant bacteruria
- * Swarming of Proteus species - Methods to prevent it.
- * Shigellosis / Bacillary dysentery :- Lab diagnosis.
- * Pyrexia of unknown Origin - Causes,
- * Typhoid fever :- Pathogenesis, Lab diagnosis, causes, vaccines.
- * Widal test :- uses, Interpretation.
- * Vibrio cholera: Morphology, culture, pathogenesis,
Lab diagnosis, Immunoprophylaxis.
- * Difference between: E-tor, classical vibrios, Halophilic vibrio

- * Helicobacter pylori (pathogenicity, lab diagnosis, Rx)
- * Pseudomonas Aeruginosa: Infection caused by it.
- * Satellitism - Explain with diagram
- * Brucellosis:- clinical features & lab diagnosis
- * Mycobacterium tuberculosis:- Morphology, culture, pathogenesis, clinical features, lab diagnosis, Multidrug resistance TB,
- BCG - Bacillus Calmette Guérin vaccine.
- Tuberculin test / Mantoux test.
- Atypical Mycobacterium
- * Lepromin Test
- Mitsuda reaction & Armadillo
- * Leptospirosis / Weil's disease:- Pathogenicity & lab diagnosis.
- * Syphilis:- Pathogenicity, diagnosis by specific tests for Syphilis, VDRL, Non specific test for syphilis
- Rapid plasma reagin test - Principle.
- Lyme disease - Causative agent & clinical picture.
- Vincent Angina
- Mycoplasma:- four features, colony characters, disease caused, Lab diagnosis.

- Actinomyces
- Nocardia
- * Rat bite fever
- * Epidemic typhus
- * Q fever
- Chlamydia:- Classification,
- Lymphogranuloma venereum
- * Inclusion Conjunctivitis
- * Innate immunity
- Passive immunity.
- Haptens
- * Heterophile antigen
- * Antibody:- Definition, basic structure, different types & their functions. (IgA, IgM, IgG).
- * Antigen-Antibody reaction:- Enumerate, Principle, clinical applications, Methodology.
- ELISA Test
- Weil-Felix test
- Prozone phenomenon.
- Immunofluorescence:- Principle, applications.
- Complement pathway:- classical & alternate, functions,

- * Cells of lymphoreticular system
- * Human leukocyte Antigen (HLA) - Role.
- Major histocompatibility complex - structure & use, restrictions
- * Monoclonal Antibody: principle, production, uses.
- * Adjuvants in immune response
- * Immunodeficiency diseases :- Enumerate,
- * Hypersensitivity :- Definition, classification, detail: I, II, III, IV
Example of each.
- * Autoimmunity :- Definition, Mechanism, reasons.
- * Allograft rejection :- Definition, Mechanism.
- * Louis Pasteur :- four significant discoveries in microbiology
- * Robert Koch postulates.
- * Flagella :- structure, function, antigenicity, distribution & demonstration.
- Bacterial cell wall :- structure, functions.
- * Bacterial capsule
- Gram -ve cell wall of bacteria.
- * Bacterial Spore.
- * Microscopy : Electron & Dark ground - Application of each.
- Bacterial Growth curve

* Sterilization :- Definition, Classification, ~~methods~~

* Hot air oven

* Sterilization by moist heat - describe.

* Autoclave :- Principle, uses, temperature + pressure +
Quality control used in it.

* Bacterial filters.

* chemical disinfectant commonly used in Hospitals.

* Culture media of bacteria :- Enumerate various types &
their uses.

* Enrichment media.

Selective media

Sabourauds dextrose agar media

} constituents, examples, uses.

* Anaerobic cultivation :- methods.

* Gas pack in anaerobiosis.

* Indole test } Principle, uses, examples of bacteria.
catalase test }

* Gene transfer :- Definition, Types & Examples.

* Bacterial plasmids (types & definition)

* Genetic recombination :- Definition, types, significance.

* Drug resistance, + Bacterial Zoonosis

* Transposons / Jumping Genes

* Modes of infection transmission + Exotoxins & Endotoxins difference