Lecture 1

INTRODICTION

Microbiology is the science study microorganism

History of Microbiology

Robert Hooke, 1665: first observation of cells
- ♦Antoni van Leeuwenhoek, 1673: first observation of live cells
- ♦Louis Pasteur, 1861: disproved spontaneous generation; 1864: pasteurization
- ♦Joseph Lister, 1867: aseptic surgery with antiseptic phenol
- ♦Robert Koch, 1876: germ theory of disease (Koch's postulates and anthrax)
- ♦Edward Jenner, 1798: first vaccine for smallpox using cowpox
- ♦Paul Ehrlich, 1910:first chemotherapy 'magic bullet' for a microbe, salvarsan(arsenic derivative) against syphilis
- ♦Alexander Fleming, 1928: discovered penicillin

Naming and Classifying Microorganisms

Each organism is assigned two names, a genus and a specific epithet (species) - Have to be underlined or italicized.

- ***Staphyloccus aureus***
- **Eschericheria coli**

3-System of Classification Based on Cellular Organization – 3 domains; Carl Woese, 1978

1-Eucbacteria

2-Archeae

3. Eukaryotic - Includes the following 4 kingdoms of eukaryotes

- **Protista** (slime molds, protozoa, and some algae)
- **Fungi** (unicellular yeasts, multicellular molds, and mushrooms)
- **Plantae** (some algae and all mosses, ferns, conifers, and flowering plants)
- **Animalia** (includes sponges, worms, insects, and vertebrates)

Microbes and Human Disease

Normal Flora (Microbiota): Variety of organisms on and in our bodies .Produce disease when disease producing properties of organisms over take natural defenses

Emerging Infectious Diseases - New ones

– Bovine spongiform encephalopathy - Prion

– Escherichia coli 0157:H7

– Ebola hemorrhagic fever

– AIDS

– Others due to AIDS

Home work

Q:What are the differences between eubacteria and archaea ?