

Bacteriology lectures

2015-5016

Lecture 1:

- The principle of Bacteriology
- History of Bacteriology
- Evolution of Prokaryotes
- Characteristic of Bacteria
- The shape of Bacterial cell

Lecture 2:

- Bacterial cell structure
- The cell wall (Gram-negative+Gram positive)
- The cell wall function

Lecture 3:

- Bacterial cell structure
- Cytoplasmic membrane
- Cytoplasm membrane function

Lecture 4:

- Mesosome
- Ribosomes
- The nucleoid
- Inclusion bodies
- Endospores
- Microbial growth

Lecture 5:

- Microbial metabolism
- Oxidation and Reduction reaction
- ATP production and energy storage
- Enzymes
- Carbohydrate catabolism
- Growth requirements
- Oxygen requirement
- Nitrogen requirement
- Physical growth requirements

Lecture 6:

- Physiological requirements
- Temperature
- pH
- water
- Osmotic pressure of a solution
- Biofilm formation

Lecture 7

- Bacterial genetics
- Nucleic acid
- Nucleotides
- DNA & RNA
- Structure of chromosome
- Codon & anticodon

Lecture 8:

- Flow of genetic information
- DNA replication
- Translation
- Transcription
- Mutations
- Plasmids

Lecture 9

- Taxonomy and classification of Bacteria
- Phenotypic classification system
- Genotypic classification system
- Industrial Bacteriology
- Genetic engineering and Bacteria

Lecture 10:

- Food Microbiology
- Conditions for Spoilage
- Microbial growth and food spoilage
- Food spoilage
- General principles/ spoilage
- Food-borne disease
- Removal of microorganism