

## Study Guide for Tim's Micro 22 Lecture Final (2019-2020)

- What do Mycoplasmas and Chlamydias can cause?
- What an amino acid, glucose, and starch look like and how big they are relative to each other.
- What do the words Catabolism, Anabolism, and Metabolism mean?
- Constitutive vs. Induced Enzymes
- The pH of blood, skin, stomach, vaginal secretions, water, and oven cleaner.
- The locations that drugs are designed to target.
- The terms infection, disease, pathogenicity, virulent and avirulent.
- Descriptions of signs, symptoms and syndromes and possible examples.
- The terms of sporadic, endemic, epidemic, and pandemic.
- Cidal vs. Static (and what is achieved via boiling, drying, etc.)
- Be able to distinguish between these modes of infection: Direct Contact, Indirect Contact, Airborne, Droplet infection, Biological and Mechanical Vector Transmission, and a Vehicle.
- The methods and chemicals used in a gram stain, spore stain and acid fast stain.
- What types of molecules can/cannot go through a cell membrane.
- The five time periods for a course of a disease (ie, Prodromal period...)
- Know the shapes and arrangements that bacteria come in (Staphylococcos, Streptobacilli, etc.)
- What HTST and UHT mean and at what temperatures and times.
- Know the difference between prokaryotic and eukaryotic cells and which organisms fall into which groups (fungi, protozoa, bacteria, worms, etc....)
- The examples given of drugs that block cell wall formation, etc.
- The kirby-bauer disk diffusion method and what R, I and S mean.
- The functions of T cells and B cells. Which functions in humoral immunity and which functions in CMI mediate immunity. Upon a subsequent exposure, how long does each take to respond.
- What are Class I MHC's and Class II MCH's and what to the typically bind to.
- What is a CD4 Receptor and a CD8 Receptor
- Know these antibodies and there functions IgM, IgG, IgA, IgD, and IgE.
- What do the terms naturally acquired active and passive immunity mean and artificially acquired active and passive immunity mean.
- Make sure you know what tranduction, transformation, and conjugation are.
- Know your oxygen requirement pictures, what a mesophile is, and the different shapes/arrangements of bacteria are (figure).
- What are the carbon & energy sources for chemoheterotrophs, chemoautotrophs, photoheterotrophs, and photoautotrophs.
- What do ID50 and LD50 refer to.
- What diseases do the following organisms cause: *Actinomyces*, *Nocardia*, *Mycobacterium leprae*, *Mycobacterium ulcerans*, *Chlamydia trachomatis*, *Rickettsia rickettsii*, and *Rickettsia prowazekii*, *Rhizopus*, *Coccidioides immitis*, *Histoplasma capsulatum*, *Pneumocystis jiroveci*, *Candia albicans*,

*Entamoeba histolytica*, *Trichomonas*, *Trypanosoma gambiense* (and its vector Tsetse fly), *Trypanosoma cruzi* (and its vector the Kissing Bug), *Giardia*, *Leishmania donovani* (and its vector the Sand Fly), *Plasmodium* (and its vector the Anopheles mosquito), *Toxoplasma* (and cat litter), *Cryptosporidium parvum*, *Schistosoma*, *Taenia solium*, *Ascaris*, *Trichinella*, *Wuchereria bancrofti*. (This is not an exclusive list, but this is 98% of the ones you need to know).

- What do the following exoenzymes of virulence do and know the example listed: collagenase, IgA proteases, hyaluronidase, lecithinase, coagulases, leukocidins, kinases and hemolysins.
- Know the following antibiotic drugs and target sites: penicillin, cephalosporin, tetracycline, streptomycin, sulfanilamide, polymyxin B.
- Know which of these is narrow spectrum vs broad spectrum: Penicillin G, Penicillin V, Amoxicillin.
- Know the basic differences in the chart comparing exotoxins and endotoxins (Unit 4a around slide 25-27).