**Introduction to Medical Microbiology**

**Exam #1 Study Guide**

***Main Themes of Microbiology***

1. Be able to identify the people of historical significance listed in class and what each one’s contribution to microbiology was.
2. Be able to identify the different branches of microbiology. (i.e. epidemiology, immunology, virology, etc…)
3. Know the basic bacterial shapes.
4. Be able to define viroids and prions.

***Tools of the Laboratory***

1. Know the basic characteristics of the different types of microscopes and any special uses of each.
2. Know the functions of differential, enriched, selective, and general-purpose media.
3. Know how media is classified based on physical form, chemical content, and function.

***Bacteria & Archaea***

1. Be able to identify and describe the 4 types of flagella arrangements.
2. Know the components of the prokaryotic flagella.
3. Be able to describe a run and tumble and what type of flagella movement causes each.
4. Know the difference between positive and negative chemotaxis.
5. Be able to describe the structure and functions of fimbriae, pilus, glycocalyx, cell wall, cell membrane, nucleoid/chromatin body, plasmid, cytoplasm, and inclusion bodies.
6. Know the process of sporulation and which bacteria are capable of producing spores.
7. Know the main structural characteristics of the Gram (+) and Gram (-) cell walls.
8. Be able to recognize the different types of prokaryotes based on their descriptions.
9. Know the different habitats (soil, water, specific body parts/systems, etc.) of the different bacterial species.
10. Know the practical functions (if given; i.e. nitrogen-fixation, antibiotic production, bioremediation, etc.) of the prokaryotes discussed in lecture.
11. Be able to match the bacterial species with the disease(s) it can cause.

***Eukaryotic Cells and Microorganisms***

1. Know the characteristics used to classify algae, protozoa, and fungi.
2. Be able to match the eukaryotic organism with the disease(s) it causes.
3. Be able to match the insect vector with the disease(s) it can carry.

***An Introduction to Viruses***

1. Be able to match the virus with the disease it causes.
2. Know the steps of bacteriophage and animal virus replication and be able to describe what happens during each step.
3. Know the overall characteristics of a virus.
4. Be able to distinguish the different types of capsomere arrangements.
5. Know the characteristics/functions of the capsid, envelope, spikes, nucleic acid, and inclusion bodies.
6. Know how viral infections are detected and treated.

***This study guide covers the majority of information on the exam but not all of it. You are still responsible for any information that was covered in the notes but not put on this guide (intentionally or unintentionally). Good Luck and Study Hard!!***