**Test Review Guide**

**Exam 1 (Chapters 1, 3-4 and 12)**

**Chapter 1**

1. List the 6 Kingdoms and give an example of an organism from each Kingdom.
2. Describe the 3 domains and give an example of an organism from each. Who came up with the 3 domains?
3. What did C. Linnaeus come up with?
4. Compare and contrast prokaryotic and eukaryotic cells.
5. Explain a peptidoglycan cell wall in both prokaryotes and eukaryotes.
6. Draw the basic bacterial shapes.
7. What are the 3 main groups of Archaea?
8. What are each of these scientists known for? R. Hooke, Van Leewenhoek, Pasteur, Lister, Koch, Fleming, Jenner
9. What does the theory of spontaneous generation state? Biogenesis?
10. What is a biofilm? Give an example.

**Chapter 3**

1. Concerning microscopes, differentiate between resolution and magnification.
2. What’s the difference between light microscopes and electron microscopes?
3. Name each type of light microscope and explain what it is best used for.
4. What is the difference between simple staining and differential staining?
5. Explain the steps in a gram stain.
6. What is acid-fast staining and what microbes is it best used for?
7. Describe capsules and negative staining.
8. Describe an endospore and give an example of at least one Genus that falls into this category.

**Chapter 4**

1. Explain the internal and external structures found in a prokaryotic cell (i.e.

glycocalyx, flagella, cell walls, ribosomes, etc.)

1. What are flagella? What are the four types of flagella?
2. Explain chemotaxis of flagella. Also explain chemoattractant and chemorepellant.
3. Describe gram positive cell walls as compared to gram negative cells walls in prokaryotes.
4. What are plasmids?

**Chapter 12**

1. Explain the internal and external structures found in a typical eukaryotic cell (i.e. glycocalyx, ribosomes, nucleus, etc.). State what each structure does.
2. Which Kingdoms are typically eukaryotic? Prokaryotic.
3. Compare and contrast a plant and animal cell.
4. What is chitin? Which Kingdom has it in their cell walls?
5. To what Kingdom do algae belong to? Why are some algae green?
6. What is hyphae? Mycelium?
7. What is photosynthesis? What organisms use it?
8. Give two types of helminthes.