1.1: Introduction to Microbiology

Study the material in this section and then write out the answers to these questions. Do not just click on the answers and write them out. This will not test your understanding of this tutorial.

1. List 5 basic groups of microbes. (ans)
2. State 3 of the many benefits from microbial activity on this planet. (ans)
3. State 2 of the harmful effects associated with microbial activities. (ans)
4. Briefly describe two different beneficial things the human microbiome does for the normal function of our body. (ans)

1.2: Cellular Organization: Prokaryotic and Eukaryotic Cells

Study the material in this section and then write out the answers to these questions. Do not just click on the answers and write them out. This will not test your understanding of this tutorial.
1. An electron micrograph of a cell shows a rigid cell wall, cytoplasmic membrane, nuclear body without a nuclear membrane, and no endoplasmic reticulum or mitochondria. Explain why it is or is not each of the following.

   a. a bacterium (ans)
   b. a yeast (ans)
   c. a virus (ans)
   d. an animal cell (ans)

2. Match the descriptions below with the best type of cellular organization.

   _____ no nuclear membrane, circular chromosome of DNA, no mitosis (ans)
   _____ capable of endocytosis, sterols in membrane, 80S ribosomes (ans)
   _____ mitochondria, Golgi apparatus, endoplasmic reticulum (ans)
   _____ cell wall contains peptidoglycan (ans)
   A. eukaryotic
   B. prokaryotic

3. **Multiple Choice (ans)**

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### 1.3: Classification: The Three Domain System

Study the material in this section and then write out the answers to these questions. Do not just click on the answers and write them out. This will not test your understanding of this tutorial.

1. Matching

   _____ Eukaryotic cells. They have membranes composed of straight fatty acid chains attached to glycerol by ester linkages. If they possess cell walls, those walls contain no peptidoglycan. (ans)

   _____ Prokaryotic cells. They have membranes composed of branched hydrocarbon chains attached to glycerol by ether linkages and have cell walls that contain no peptidoglycan. They often live in extreme environments. (ans)

   _____ Prokaryotic cells. They have membranes composed of straight fatty acid chains attached to glycerol by ester linkages and have cell walls containing peptidoglycan. (ans)
   
   A. Archaea
   B. Bacteria
   C. Eukarya

2. Matching

   _____ Simple, predominately unicellular eukaryotic organisms. Examples include slime molds, euglenoids, algae, and protozoans. (ans)

   _____ Multicellular organisms composed of eukaryotic cells. The cells are organized into tissues and lack cell walls. They do not carry out photosynthesis and obtain nutrients primarily by ingestion. (ans)
Multicellular organisms composed of eukaryotic cells. The cells are organized into tissues and have cell walls. They obtain nutrients by photosynthesis and absorption. (ans)

A. Fungi Kingdom
B. Protista Kingdom
C. Plantae Kingdom
D. Animalia Kingdom

3. Multiple Choice (ans)