

**Africa Institute for Project Management Studies**

**Course Name:**

**Human Nutrition and Dietetics**.

**Assignment Number: Module 6**

**Index Number**

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ASSIGNMENT 6

1. State the main difference between bacteria cell and typical prokaryotic cells.

* Bactria cell has no true nucleus while prokaryotic cells have true nucleus with double membrane.
* Bactria cells are circular while prokaryotic cells are linear with histone proteins.
* Bactria cells have very few structures whereas prokaryotic cells are highly structured by endomembrane and a cytoplasm.
* Bactria cells have single chromosome while prokaryotic cells have more than one chromosomes.
* Prokaryotic cells are much smaller than eukaryotic cells, have no nucleus, and lack organelles.
* All prokaryotic cells are encased by a cell wall. Many also have a capsule or slime layer made of polysaccharide.
* Prokaryotes often have appendages (protrusions) on their surface. Flagella and some pili are used for locomotion, fimbriae help the cell stick to a surface, and sex pili are used for DNA exchange.
* Most prokaryotic cells have a single circular chromosome. They may also have smaller pieces of circular DNA called plasmids whereas bacteria.

1. State the functions of the Cytoplasmic membrane in a bacterial cell.

* They keep toxic substances out of the cell;
* They contain receptors and channels that allow specific molecules, such as ions, nutrients, wastes, and metabolic products that mediate cellular and extracellular activities to pass between organelles and between them.

1. Name three members of enterobacteriacea. This group of microorganisms are also known as the “hygiene” group of microorganisms. Explain why.
2. Define mycotoxins. Giving examples explain why they are of concern in the food industry.

* Mycotoxins are toxic secondary metabolic products of molds present on almost all agricultural commodities.
* Human food can be contaminated with mycotoxins causing sickness.
* Mycotoxicoses, like all toxicological syndromes, can be categorized as acute or chronic. Acute toxicity generally has a rapid onset and an obvious toxic response, while chronic toxicity is characterized by low-dose exposure over a long time period, resulting in cancers and other generally irreversible effects ([James, 2005](https://www.sciencedirect.com/science/article/pii/S1319610310000827" \l "b0300)).
* Pigs Swine are among the most sensitive species to mycotoxins.
* Dogs and cats the effects of mycotoxins on companion animals are severe and can lead to death. responsible for the 1952 case was identified as AFB1 and the symptoms of aflatoxicoses in dogs were elucidated
* Mycotoxins may cause allergic reactions.

1. Explain why bacteriophages is a major concern in the dairy industry

* Phage outbreaks can lead to substantial economic losses due to manufacturing delays.
* Waste of ingredients, lower quality product.
* Growth of spoilage and pathogenic microorganisms or even total production loss.
* Food spoilage [Saprotrophic](https://en.wikipedia.org/wiki/Saprotrophic_nutrition) bacteria attack and decompose organic matter. This characteristic has posed a problem to humankind as food such as stored grains, meat, fish, vegetable and fruits are attacked by saprotrophic bacteria and spoiled.
* Similarly, milk and products are easily contaminated by bacteria and spoiled.
* Bacteria cause a wide range of [diseases](https://en.wikipedia.org/wiki/Disease) in humans and other animals. Plant caused by bacteria are commercially important worldwide for [agriculture](https://en.wikipedia.org/wiki/Agriculture).

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