Assignment 04-BIOEMES

Unit 4 - WEEK 04

The due date for submitting this assignment has passed. You are no longer allowed to work on this assignment.

1. The only way to be fit is to be foolish sometimes.
   - Aristotle

   Required Answer:
   - Explain the significance of this statement in the context of scientific inquiry.

   Suggested Answer:
   - This statement highlights the importance of being open to new ideas and the risk of failure.

2. Identify two types of prokaryotic cells and explain how they differ.
   - Bacteria
   - Cyanobacteria

   Required Answer:
   - Describe the differences between these two types of prokaryotic cells, including their structures and functions.

   Suggested Answer:
   - Bacteria are generally smaller and more diverse than cyanobacteria. They are also capable of forming endospores.

3. Describe the structure of DNA and RNA.
   - DNA
   - RNA

   Required Answer:
   - Explain the structure of DNA and RNA, including their components, function, and role in genetic information.

   Suggested Answer:
   - DNA contains deoxyribonucleotides, while RNA contains ribonucleotides. DNA is double helical, while RNA is single-stranded.

4. Discuss the role of mitochondria in cellular respiration.
   - Mitochondria

   Required Answer:
   - Describe the role of mitochondria in cellular respiration, including the processes involved and the products generated.

   Suggested Answer:
   - Mitochondria are the site of oxidative phosphorylation, where ATP is produced.

5. Explain the process of protein synthesis in eukaryotic cells.
   - Protein synthesis

   Required Answer:
   - Outline the steps involved in protein synthesis in eukaryotic cells, including transcription and translation.

   Suggested Answer:
   - Transcription: mRNA is synthesized from DNA. Translation: mRNA is translated into proteins on ribosomes.