

## **B. Critical Thinking**

### **1. Explain if the statement is correct or incorrect: Plants have chloroplasts and animals have mitochondria**

- It is correct, plants have chloroplasts and animals have mitochondria. Plant cells contain chloroplasts because it conducts photosynthesis. On the other side, animals do not have chloroplasts, but they have mitochondria. Both plants and animals have mitochondria, which supply the energy of the cell. Eukaryotic cells have mitochondria or the powerhouse of the cell, since the organelle is responsible for energy production.

### **2. Explain why a lysosome remains unaffected even if it stores powerful digestive enzymes known as lysozymes**

- Lysosomes are organelles that responsible for digestion and removal of wastes in the cell. While, lysozyme, a powerful enzyme, helps a cell to fight from bacteria and viruses. It remains unaffected because the lysosome membrane has protective layer, Glycocalix. The membrane covers and protects the internal enzymes to stop the lysosome from digesting the cell itself.

## **Essential Questions:**

### **3. Why is it important to understand and appreciate the biologists' contribution to your knowledge about cells?**

- It is important to understand and appreciate the structures and functions of cells because it helps to know the fundamental concepts of life. Since cells come from preexisting cells, it is fascinating to relate cells from a larger environment. We are all linked by the sequence of cell divisions, coming from our ancestors up to now. For instance, by the help of scientists' curiosity, they came up to prevent diseases and invent medicines and vaccines.

### **4. How do microscopes differ in their functions and capabilities in appreciating minute life forms?**

- Microscopes are instruments used to obtain a magnified image of minute objects or minute details of objects. Biologists use different microscopes depend on the situations or their studies in organisms. Most common microscope in schools is light microscope, while, researchers or biologists use electron microscope. Different types of microscopes differ in terms of their uses, magnification, and resolution capabilities. Capabilities of

microscopes are micrograph, magnification, and resolution. Micrograph is a digital image taken by microscope. Magnification is the ability of a microscope to view an object to a larger and smaller size. Resolution is ability of a microscope to distinguish an object due to its clarity of an image.

**5. How useful is the cell type in classifying organisms?**

- It is significant to know the cell type, because it can easily classify or distinguish an organism. Biologists can recognize by a simple prokaryotes and a complex eukaryotes. For example, eukaryotic cells have nucleus, but prokaryotic cells do not have nucleus.

**6. How do cell parts harmoniously function to keep cell alive?**

- Cells are keeping alive through functions of cells. Cell structures for protection are Cell membrane, Cell wall, and Cytoplasm. Organelles that manufacturing, storing, and distributing organelles are Endoplasmic reticulum, Golgi apparatus, Vesicles, Vacuoles, Lysosomes, and Peroxisomes. The energy-processing organelles are Mitochondria and Plastids. Organelles for structural support, movement, and communication are Centrosome, Centrioles, Cilia, Flagella, Cytoskeletons, Cell surfaces, and Junctions. The structures of cells which they can share and work, keep humans and living organisms alive.

**7. How do different cells in the body keep you alive?**

- The human cells are blood cells, bone cells, gland cells, muscle cells, nerve cells, and reproductive cells. Each of these cells has unique characteristics that suits its functions and size. Through the functions of different cells, it can keep organisms alive.