Choose one of the following three topics for your primary post. Your primary post should address everything that the instructions call for (for the topic you choose). Your post should also be at least 125 words in length. Additionally, please respond to at least one other discussant on any topic.

**Topic 1. Sexual Reproduction in Unicellular** **Eukaryotes**. Watch the instructor's video about "Sexual Reproduction in Unicellular Eukaryotes" (1)\* which can be found in the Instructor Insights section for this week. For a single-celled species to be capable of sexual reproduction, the species must have both haploid and diploid forms

* (a) Describe four things that you learned from the video.
* (b) Explain how this relates to this week’s lesson.

**Topic 2. Apoptosis**. Watch the Khan Academy video about apoptosis (2)\*, then address the following issues in your own words:

* (a) What is the difference between apoptosis and necrosis?
* (b) What is the role of apoptosis in the normal, healthy development of animals?
* *Reminder: you don't need to cite the Khan Academy video for this topic, but if you use any other sources, you must cite them.*

**Topic 3. Tumor-suppressor genes versus Proto-oncogenes.** This is a library-research topic in which you are required to provide your sources. Mutations in tumor suppressor genes can contribute to or cause cancer, just as mutations in proto-oncogenes can also contribute to or cause cancer. However, tumor suppressor genes are very different from proto-oncogenes.

* (a) What is the basic difference between a tumor suppressor gene and a proto-oncogene?
* (b) Explain why a gain-of-function mutation to a proto-oncogene (or its promoter) may be associated with increased risk of cancer.
* (c) Explain why a loss-of-function mutation to a tumor suppressor gene may be associated with increased risk of cancer.

References:

1. James Cox, April 15, 2018, Sexual reproduction in a unicellular eukaryote (version 2). See the video in the Week 5 Instructor Insights or the following link <https://cdnapisec.kaltura.com/index.php/extwidget/preview/partner_id/956951/uiconf_id/38285871/entry_id/0_7ruy782g/embed/dynamic>
2. Khan Academy, No date given, Apoptosis [video], <https://www.khanacademy.org/science/biology/cellular-molecular-biology/stem-cells-and-cancer/v/apoptosis>
   1. "Health Care Professionals and Allied Health Professionals"  Please respond to the following:

* Analyze two career options in the health care industry, in terms of the educational requirements, job responsibilities, and average salaries.
* From the e-Activity, discuss two differences between health care professionals and allied health care professionals. Provide specific examples to support your rationale.
  1. Nursing Shortages"  Please respond to the following:
* Suggest two factors that are contributing to the current state of the nursing industry in the U.S. Focus on both internal and external influences. Provide specific examples to support your rationale.
* Analyze two issues that contribute to the current nursing shortage in the U.S., and propose a strategy to rectify this employment issue.