

Answers
Science 9
Chapter 5- Reproduction Review

Complete Questions pg 172 #2, 3, 4, 7

2. a) **Animal Cells = C,D**

Plant Cells = A,B

b) **A= metaphase**

B = telophase

C= anaphase

D = anaphase

3. **The cell cycle is the sequence of events from one cell division to another.**

4. **Interphase is the stage between cell divisions. It is important to the process because during interphase the cell must grow and duplicate it's genetic material. Without this duplication of the genetic material the cell would not be able to divide into two equal parts.**

7. **The duplication of genetic material is important so that the cell will have enough genetic material to be able to split into two identical cells.**

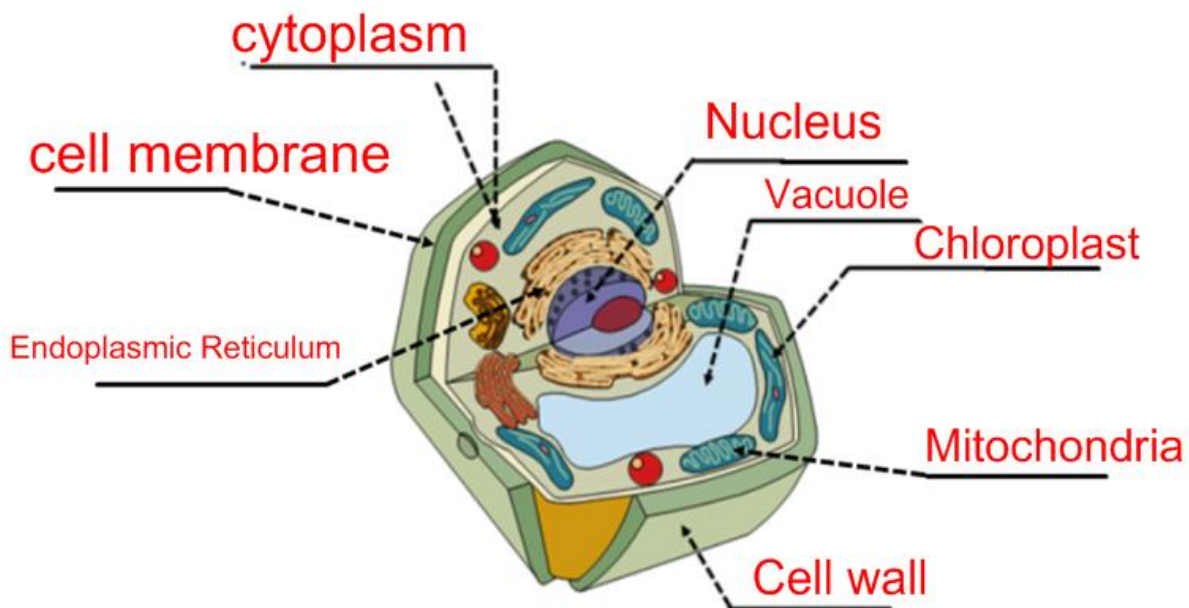
Part A: Match each of the following individuals with their discovery

1. Robert Hooke **D**
2. Matthias Schleiden and Theodor Schwann **C**
3. Robert Brown **A**
4. Anton Van Leuwenhoek **B**

Part B: Given the following descriptions of microscopes place the correct name beside each description either: compound light microscope, transmission electron microscope (TEM) or Scanning Electron Microscope (SEM).

1. This microscope uses electrons to viewing 3D images of living OR non-living samples. **SEM**
2. This microscope uses light to view a sample at 2000x magnification. **Compound Light Microscope**
3. This microscope uses electrons to view images that must be non-living. **TEM**

Part C: Label each of the following parts of the Plant cell shown:



Part D: Give the function for each of the following organelles:

1. Cell Membrane – **controls the movement of materials into and out of the cell**
2. Cell Wall – **protects and supports the plant cell**
3. Mitochondria – **provides the cell with energy**
4. Endoplasmic Reticulum (ER)- **the highway system of the cell, used to transport materials**
5. Vacuole – **fluid filled space used to store water, wastes etc**
6. Chloroplast – **contains the chlorophyll used in photosynthesis**
7. Lysosome- **contains protein that can break down large molecules**
8. Golgi Apparatus –**stores proteins until they need to be used**
9. Cytoplasm- **jelly-like substance that holds all the organelles in place**
10. Ribosome – **builds proteins essential for cell growth and reproduction**
11. Nucleus – **control center of the cell**
12. Nucleolus- **believed to be involved in protein production**
13. Centrioles- **protein structure involved in cellular reproduction**

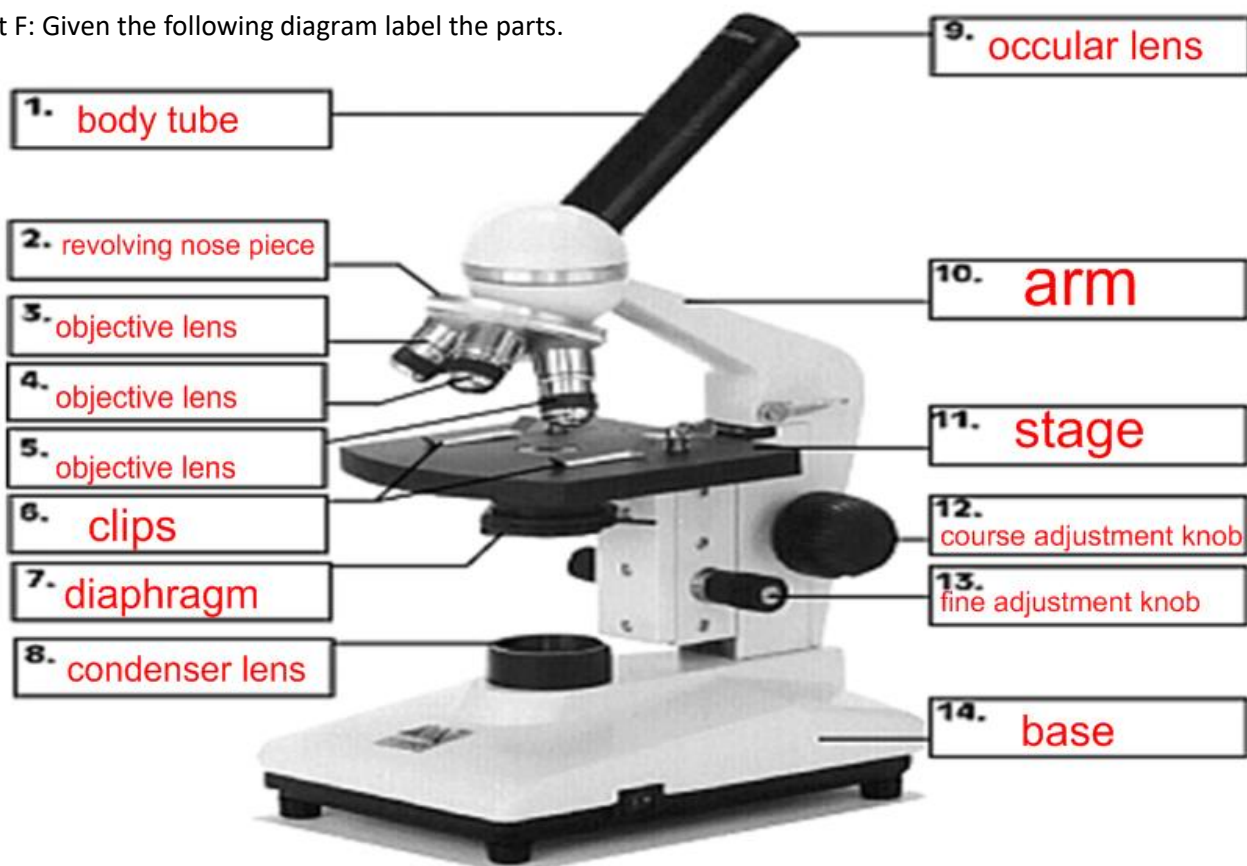
Part E: Compare each of the following terms:

1. Asexual and Sexual Reproduction- **asexual reproduction involves one cell splitting into two identical cells and there is no fertilization required. Sexual reproduction involves two cells fusing that have different genetic information and there must be a fertilization.**
2. Zygote and Daughter Cell – **the zygote has different genetic information than the parent the daughter cell is identical to the parent.**
3. Regeneration and fragmentation - **regeneration occurs when a limb or other body part can re-grow if removed. Fragmentation involves the broken body part developing into a new organism.**
4. Budding and fragmentation- **fragmentation occurs when a piece breaks off and then forms into a new organism. Budding occurs when an outgrowth from the parent breaks off and becomes a new organism once it has fallen off.**

Part G: State the three parts to the cell theory

1. All cells come from pre-existing cells
2. Cells are the basic units of life
3. All living things are made up of one or more cells

Part F: Given the following diagram label the parts.



Part I: Given each of the following descriptions name the type of asexual reproduction.

- a. A starfish loses its arm in a battle with another starfish, the arm then develops into a new starfish.
Fragmentation
- b. A hydra plant produces an outgrowth and this outgrowth develops into a new hydra plant.
Budding
- c. A new tree begins to grow from a root of a nearby tree.
Vegetative Reproduction
- d. Your bread begins to form mold on it after sitting on the counter for a couple of weeks.
Spore Formation
- e. Bacteria reproducing at an alarming rate.
Binary Fission