**BIOLOGY EOG STUDY GUIDE**  
  
**What are the 3 parts of the atomic theory:**  
  
**\_\_\_\_\_\_\_\_\_\_cell** has no nucleus and is singled celled organisms.  
  
\_\_\_\_\_\_\_\_\_\_ cell has a nucleus and is usually multicellular organisms.

Place in order from smallest to largest: organism, tissue, organ systems, cell, organ  
  
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**Cell organelles** are mitochondria, chlorophyll, cell membrane, lysosome, cytoplasm, nucleus, Golgi bodies ,chromosome, ribosome, nucleolus, endoplasmic reticulum, cell wall , vacuole, and chloroplast   
  
**\_\_\_\_\_\_\_\_\_\_** - controls movement in and out of the cell  
**\_\_\_\_\_\_\_\_\_\_** – supports and protests the plant cell  
**\_\_\_\_\_\_\_\_\_\_**– gel-like material inside the membrane that separates the organelles.  
**\_\_\_\_\_\_\_\_\_\_**– directs cell activities and contains DNA.  
**\_\_\_\_\_\_\_\_\_\_**– contains RNA which tell the types of proteins to make  
**\_\_\_\_\_\_\_\_\_\_** – made up of DNA and contains the traits and characteristics of an organism  
**\_\_\_\_\_\_\_\_\_\_**– where proteins are made and used to make cell parts  
**Endoplasmic reticulum** – provide transportation of in the cell  
**Golgi bodies (apparatus)** – packages protein in the cell  
**Vacuole** – location of storage, digestion and waste disposal.  
**Lysosome** – responsible for breaking down molecules in the cell  
**\_\_\_\_\_\_\_\_\_\_** – produces energy for stored fat and carbohydrates and releases it to the cell. It is the organelle responsible for making energy.   
**\_\_\_\_\_\_\_\_\_\_** – capture light energy and use water and carbon dioxide to water food (glucose)  
**\_\_\_\_\_\_\_\_\_\_\_** – green chemical in plants that facilitates photosynthesis  
  
Differences between plant and animal cells: only plant cell have \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_; plant cell also have a large vacuole.

What is the difference between a cell and an atom?

What are the 4 macromolecules and tell the functions of each

1. \_\_\_\_\_\_\_\_\_\_\_\_\_ -
2. \_\_\_\_\_\_\_\_\_\_\_\_\_ -
3. \_\_\_\_\_\_\_\_\_\_\_\_\_ -
4. \_\_\_\_\_\_\_\_\_\_\_\_\_ -

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the use of biological processes, organisms, or systems to manufacture products intended to improve the quality of human life.   
**Cell Processes**  
**Passive transport** – movement of materials from high concentration to low concentration without using any energy. The cell accomplishes this through diffusion and osmosis (diffusion when water is used).  
**Active Transport** – requires energy to move material from low concentration to high concentration in the cell.  
**Homeostasis** – when the cell membrane maintain stability in the cell.  
**\_\_\_\_\_\_\_\_\_\_**– the process through which plant make glucose (food) using sunlight and water.   
**\_\_\_\_\_\_\_\_\_\_** – the process through which a cell break down glucose into energy (ATP) to be used by the cell.  
**\_\_\_\_\_\_\_\_\_\_** – the process by which the cell divides into two identical cells  
**\_\_\_\_\_\_\_\_\_\_** – process where sex cells divides  
  
Write the equation for photosynthesis and explain the process.

Write the equation for cellular respiration and explain the process.

Explain how cells, bacteria, and viruses reproduce?

Name 3 ways disease can be spread?

What is a vector? Provide examples.

How are viruses and bacteria treated?

What is antibacterial resistance and why is it bad?

The local spread of a disease is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ whereas the global spread of disease is known as \_\_\_\_\_\_\_\_\_\_\_\_.

Why is a bacteria considered to be the smallest living thing and not a virus?

The Theory of \_\_\_\_\_\_\_\_ states that species change over time in response to changes in their environment.

When an organism’s environment changes they must \_\_\_\_\_\_\_\_\_\_\_\_\_ or they will become \_\_\_\_\_\_\_\_.

Genetic \_\_\_\_\_\_\_\_ increases a species chance for survival.

When a species of animals is divided or separated it is known as \_\_\_\_\_\_\_\_\_\_\_\_, and the diversity of the species

increases. Animals adapt to their new environment in order to survive. After several generations of \_\_\_\_\_\_\_\_\_\_\_, a

new species that’s different from the original one will emerge. This process is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

What is a mutation?

What is the difference between artificial and natural selection. Provide examples of each.

Explain each part of natural selection

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ -

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ -

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ -

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ -

What are the differences between analogous and homologous structures.

What is a vestigial structure and provide one example.