EXAM Date: Monday, September 25th, 2017

Name _____ Date _____

Study Guide for 1st Nine Weeks Life Science

You will need to study the following information for the nine weeks science test which covers plant and animal cells, microorganisms (beneficial and harmful), single- & multi-celled organisms, classification of animals (Phyla: Vertebrate, Invertebrate & Class: Mammals, Birds, Fish, Amphibians, Reptiles), and classification of plants (Vascular & Non-vascular).Complete answers on a separate sheet of paper.

You should be able to:

S5CS8c:

1. Determine which instrument is the best to look at cells and their structures. A microscope

S5L3b:

2. Identify the 7 organelles (also called structures) in the plant cell and explain the function of each.

Cell Membrane- holds the cell together and separates it from surroundings

Cell Wall- supports and protects the cell

Nucleus- directs cell activities

Cytoplasm- jellylike substance containing chemicals that help a cell stay healthy.

Chloroplast- makes food for the cell

Vacuole- stores food, water, and waste

Mitochondrion- releases energy

3. Identify the 5 organelles (also called structures) in the animal cell and explain the function of each.
Cell Membrane- holds the cell together and separates it from surroundings.

Cytoplasm- jellylike substance containing chemicals that help a cell stay healthy.

Vacuole- stores food, water, and wastes
Nucleus- directs the cells activities
Mitochondrion- releases energy from food.

4. Identify the organelles (structures) that are different in the plant and animal cell.
Plants have chloroplast (uses photosynthesis to make food for the cell) and a cell wall (outside the cell membrane and protects the plant cell). Animal cells do not have these structures.

S5L3c:

5. Explain how structure and function of cells in single- and multi-celled organisms are alike and different.
Both have organelles.
Multi-celled organisms- made of trillions of cells- each cell is able to carry out its own function- made of tissue→organ→organ system.
Single- celled organisms- function differently-have no organs or tissues- one cell must do all functions to survive.

6. Do all organisms -- single-celled and multi-celled -- have organelles (structures)? Yes, they both have organelles.

S5L3c:

7. Identify kinds of microorganisms: bacteria (example - salmonella), protist (example - algae), fungi (examples - mold & yeast). (Are these single-celled or multi-celled?)
   Bacteria- more bacteria on Earth than any other living thing- shaped like rods and spirals
   Protists- 80,000 kinds- ex: algae-makes own food; protozoan hunt for food, can be single celled or multi-celled.
   Fungi- ex: mold; yeast. Looks like plants-decomposers- can't make their own food

8. Explain the benefits of microorganisms (how they can be helpful to us).
   Help break down food in digestive system.
   Phytoplankton- main food for fish
   Turns milk into yogurt
   Makes bread rise
   Penicillin- made of mold- kills harmful bacteria

9. Explain the dangers of microorganisms or (how they can be harmful to us).
   Bacteria can cause illness- staph, pimples, infections- salmonella and E. coli

S5CS1d:

10. Explain the dangers of not washing our hands properly.
    Spreads germs or microbes to other people or giving them to ourselves

S5L1a:

11. Name characteristics of vertebrates and invertebrates.
    Vertebrates- have a backbone
    Invertebrates- do not have a backbone

12. Name characteristics of the 5 classes of vertebrates: reptiles, amphibians, birds, mammals, fish.
    Reptiles- have scaly skin and most lay their eggs on land
    Amphibians- begin life in water but live on land as adults
    Mammals- have hair and produce milk for young
    Birds- have feathers which keep them warm and help them fly
    Fish- have scales and live entire life in water

S5L1b:

13. Identify characteristics of vascular plants and non-vascular plants.
    Nonvascular- do not have true roots- anchored to the ground by small root like structures- no true leaves- do not have veins- do not have tissue to carry materials throughout the plant.
    Vascular- have tissue to support the plant, carries food and water- roots, stems, and leaves all contain vascular tissue

14. Define gymnosperm, angiosperm, xylem, and phloem.
    Xylem- vascular tissue that carries water and nutrients from roots to other parts of plant
    Phloem- vascular tissue that carries food from leaves to the rest of the plant
    Gymnosperm- a plant that produces naked seeds like a pine cone
    Angiosperm- a flowering plant, which has seeds protected by fruit

15. Explain how seeds grow into new plants.
    Pollen grains are released and can look like a golden dust cloud- some settle on other plants and then seeds develop. When seeds mature, they will land on a suitable habitat and a new plant will grow

16. Understand how growing plants take nutrients from the soil and explain how the nutrients are naturally replaced.
    Nonvascular plants absorb water and nutrients from their surroundings.
    Vascular Plants have tissues that support the plants and carry water and food- this is done with the roots and stems
    Vascular Tissue- *xylem- carries water and nutrients from the roots
    *phloem- carries food to the leaves