Biology Spring Semester ~~2015~~ 2016 Review Name:

Genetics:

Who is known as the father of genetics?

Compare/contrast the terms homozygous and heterozygous.

Compare/contrast the terms dominant/recessive.

Compare/contrast the terms genotype/phenotype.

Show your work and use a punnett square to cross the following genotypes: homozygous tall with heterozygous short (tall is dominant-T and short is recessive-t)

What is a females genotype _____? What is a males genotype_____? (lettering)

In humans, which parent determines the sex of the baby? Explain why?

What is a karyotype used for?

What does a human pedigree look like and what does it tell us?

Evolution:

How does the process of natural selection work –

Natural selection would not occur without _____ in species.

Give at least three predictions about species made by the theory of evolution:

What are three major pieces of evidence given for evolution:

Define Homologous structures.

What do homologous structures in organisms suggest about their relationship to other organisms?

Define vestigial structures and give an example

How do new species form?

Organisms face a struggle for existence because of limited _____.

Classification:

What is binomial nomenclature and who developed it?

Define taxonomy:

All scientific names must have:

What do we use a taxonomy key for?

Starting from largest to smallest and give the classification levels, remember: Do Kings Play Chess On Fine Green Sand.

Define species:

Each level of classification is based on _____ characteristics.

Eukaryotes are found in which kingdoms:

1)

2)

3)

4)

Prokaryotes are in which two kingdoms:

1)

2)

What are at least three characteristics used to differentiate the kingdoms?

2/3 of all named species of animals are from what phylum?

In terms of nutrition, what is one big difference between plants and animals?

Ecology:

What is a population? Give an example

Demographic studies of populations must take what three things into consideration?

There is an increase in competition for what three things when a population reaches carrying capacity?

Define the following words:

Community –

Biome-

Habitat-

Primary Producers –

Primary Consumers –

Niche-

Ecology-

Why are food webs more commonplace than food chains?

Define and give an example for each symbiotic relationship below:

Parasitism-

Mutualism-

Predation –

Commensalism-

Competition-

What are biomes?

What biome makes up most of the central part of the U.S.?

Name the four Earth cycles that all organisms are dependent on?

Bacteria and Viruses:

Why are viruses not considered to be living? (give 3 reasons)

Viruses must reside in a host, this makes them _____

Do viruses have any of the same organelles as living organisms?

Define pathogen:

What are several structures you would NOT find in a prokaryote (bacteria) cell?

What are three shapes that bacteria look like?

What are antibiotics? Name a few types of antibiotics. What structure do they typically "attack" in bacteria?

Why are antibiotics ineffective against viral infections?

Kingdom Fungi:

What is the main purpose of fungi?

Name two types of fungi and the human use of each?

Kingdom Protista:

Protists are very diverse. What range of characteristics may they have in terms of number of cells and nutrition type.

Where are you most likely to find protists?

Name several human diseases caused by protists:

Kingdom Plantae:

Compare and contrast a plant and animal cell?

What is the difference between an angiosperm and gymnosperm?

What are the functions of roots, stems, leaves, xylem and phloem tubes found in a plant?

Label the parts to a flower and list the function of each:

Kingdom Animalia:

What is a major characteristic of animals that separates them from members of other kingdoms?

What is the most important advantage to multi-cellularity (having complex structures)?

What are several advantages to the development of more complex body cavities? (Think about the different types of animals we studied)

Human Body Systems: (Skeletal/Integumentary/Muscular)

Starting with the smallest functional units to the largest, the body is organized how? (use arrows)

Epithelial tissue does what? Examples include?

Connective tissue does what? Examples include?

What are the three types of muscle tissue?

Give three characteristics or actions of smooth muscle?

Which doesn't belong to the axial skeleton? Backbone, rib cage, pectoral girdle, and skull

What type of bone provides the greatest strength for support?

What is bone marrow?

Give several reasons women are more susceptible to osteoporosis than men?

Tendons connect: Ligaments connect: Cartilage is:

What is actin and myosin? What do they do?

Best type of exercise to improve cardiovascular endurance?

Best type of exercise to improve size and strength of muscles?

What are the functions of the skin?

What is the most dangerous type of skin cancer?

Circulatory/Respiratory Systems:

What are three functions of the human cardiovascular system?

Arteries –

Veins –

Where is blood made?

Name the chamber of the heart that is responsible for each of the following below?

Receives blood from the body _____ ___

Receives blood from the lungs_____

Pumps blood to the lungs_____

Pumps blood to the body_____

What is the major function of the respiratory system?

What does the alveoli in our lungs do?

What structures does pulmonary circulation flow between?

The breathing center in the brain is most sensitive to the concentration of _____ in the _____.

Digestion and Excretion:

What are vitamins?

Pepsin and hydrochloric acid in the stomach digest _____.

Villi in the small intestine are for the increase in _____

Most enzymes and chemicals secreted into the small intestine come from what other 2 organs?

The kidneys function to maintain homeostasis by _____

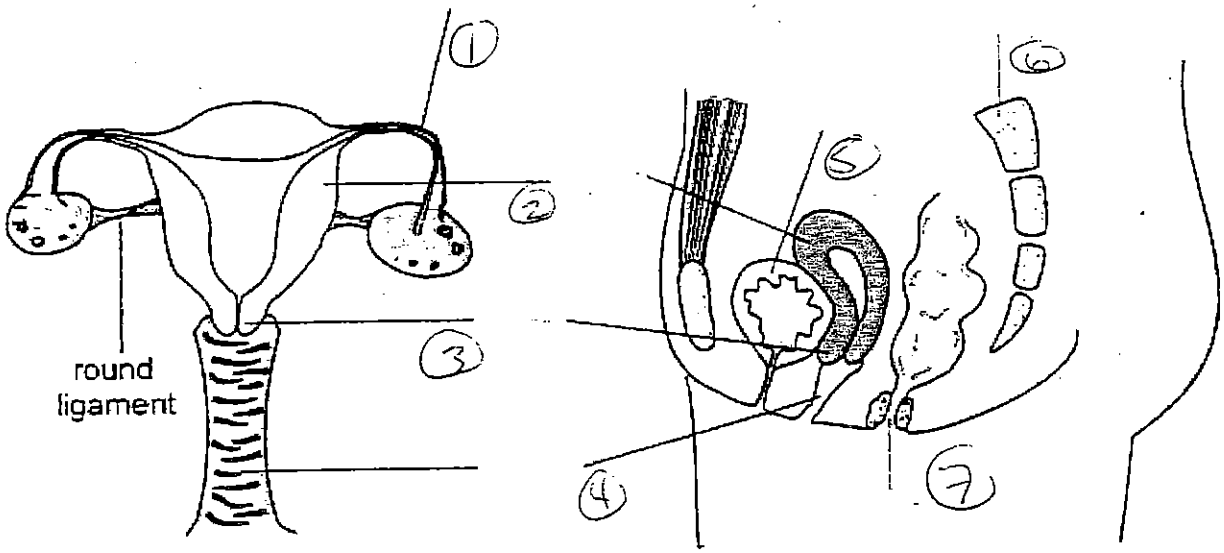
Endocrine:

What is the endocrine system made up of and what is its purpose?

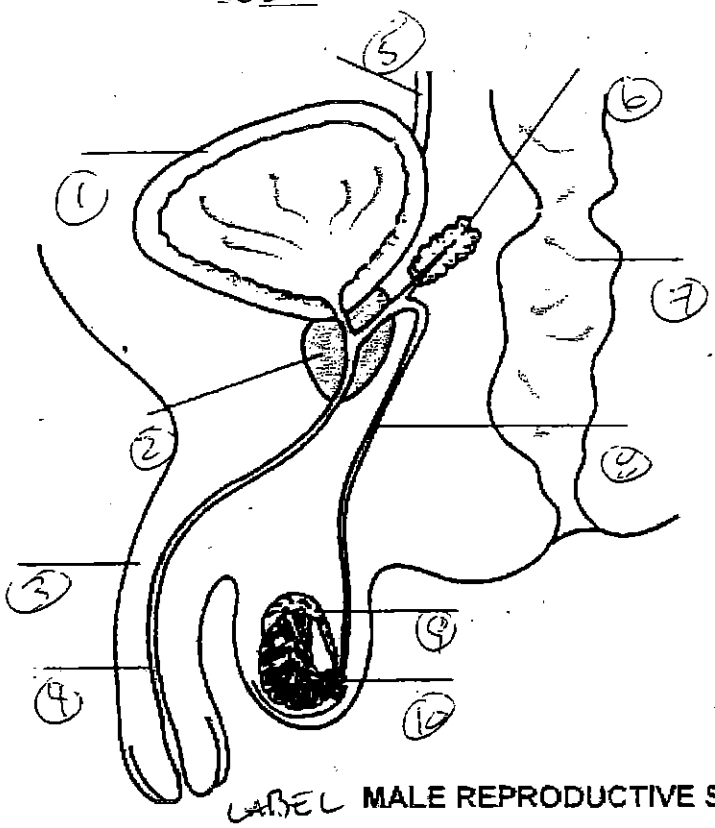
List 4 specific functions of the glands of our endocrine system?

Reproduction:

Label the structures found in the female/male reproductive systems, use diagrams below.



LABEL FEMALE REPRODUCTIVE SYSTEM STRUCTURES



LABEL MALE REPRODUCTIVE SYSTEM STRUCTURES