Name _____Per_____ Date_____

Human Digestion Introduction Lecture

_____ is the process that changes food into a form that is usable by your body.

The Alimentary Canal

- The _____ of food from your _____ to your _____.

A. Eight Parts of the Alimentary Canal

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Accessory Organs

Food does no pass directly through these organs. However, these organs aid in _____ with the use of _____and _____.

- **_____** = produces bile salts that _____ fats in the small intestine.
- **_____**= small, thin sac near the liver that stores _____.
- **_____** = found near the spleen and produces enzymes for the breakdown of all categories of food.

Phases of Digestion

1. Mechanical Digestion
   - Chewing, churning, and mixing done by the _____ and the _____.
   - _____ breakdown of large food _____ to smaller food globules.
2. Chemical Digestion
   - Utilizes _____from glands to chemically break the _____between the molecules.
   - _____ (large) break down into _____(small)**.**

Terms Associated with Mechanical Digestion

1. _____ 3._____ 5._____
2. _____ 4._____ 6._____

Chemical Digestion (fill in the terms below).

In the diagram, _____, gets broken down into _____ by the _____, then the _____molecules pass though the _____of the intestine into the _____ _____ where the nutrients can travel to where they are needed.

The Mouth

A. Gets _____ ready for _____.

B. Teeth _____ break up food making it _____ to digest.

C. Salivary glands _____ mucous and enzymes Amylase) that _____ carbohydrates.

- **_____ Gland** = largest, _____ when you have the mumps.
- **_____ Gland** = located at the _____ of the jaw.
- **_____ Gland** = located _____ the tongue and causes the mouth to water.

D. The tongue is a _____ organ that helps in chewing and swallowing and moves around the mouth to keep the _____ clean.

The Esophagus

A. Connects the _____ to the _____.

B. _____ and longitudinal (smooth) muscles move the food _____ to the stomach via _____**.**

C. Located _____ to the trachea.

D. The name of the mass of food in the diagram is called the _____.

The Stomach

*The Stomach _____ and _____ food.

A. Gastric Glands in the stomach lining…

1. Secretes Hydrochloric Acid (_____)
    a. Kills bad _____present on the food.
    b. Regulates the stomach's lower _____ _____ valve.
    c. Controls the stomach _____ level.
2. Secretes the enzyme _____.
    a. Pepsin is the first step in _____digestion—breaks down protein _____ into smaller chains of _____acids called polypeptides and _____.
3. Secretes Mucous.
    a. Mucous _____the stomach _____ from digesting itself.
    b. If mucous levels are _____ in a body, then that person may develop **ulcers** = a _____or raw area in the stomach lining or duodenum of the small intestine.

B. _____ stays in the stomach for _____ hours.

C. Food (_____) enters into the small intestine through the_____valve (sphincter).

Gastric Ulcers are found in the _____whereas **duodenal ulcers** are in the _____

The Small Intestine

Small Intestine divided into 3 regions**:** ***Remember _____ !!!

1. _____(10-12 in)—attached to the _____stomach.
    a) Receives _____from the Gall Bladder and enzymes from the _____.
    b) High pH _____here neutralizes _____ from the stomach.
2. _____(8 feet)—middle section of small intestine.
3. _____ (12 feet)—last section that connects _____ to the large intestine. The appendix (_____) is found in this region.

Enzymes from the Small Intestine

Four Different Enzymes Secreted Here:

1. _____—finishes _____digestion that started in the stomach.
    a) _____ dipeptides into amino acids.
2. _____—changes maltose to glucose.
3. _____—changes lactose to glucose.
4. _____—changes sucrose to glucose.

*Notice that enzymes all end in –_____ and the root words are the same as the sugars they break down.

Enzymes from the Pancreas

_____= an accessory organ found _____ the liver near the _____.

Enzymes pass from the pancreas through the pancreatic _____ into the _____.

1. _____—converts polypeptides to dipeptides.
2. _____—digests carbohydrates.

3. _____—digests small fats.

The Liver = An _____organ found in the _____abdominal cavity.

A. The Liver makes bile:
   1. **Bile** is a _____that _____(breaks up) large fat globules into smaller ones.
   2. **Bile** _____the enzyme _____to break down fats.
   3. **Bile** enters the _____ through the common bile duct.

B. The Liver has other functions:
   1. Removes _____from the blood and stores it as _____ (medium-term NRG)
   2. Breaks down amino acids (=_____) for energy.
   3. _____the blood of any _____.

The Colon (=Large Intestine)

The last part of the_____ canal attached to the small intestine.

A. Receives _____ food from the _____intestine.
B. Function: it squeezes out _____ to solidify the _____.
C. If material passes slow = _____. (_____)
   If material passes quick = _____. (_____)
   If material doesn't move =_____ ☹! Get out the latex gloves.
D. Feces collect in the _____. The _____ contracts to hold in the poo! When it relaxes, then you _____.
E. **There's a bacterium in my colon!**
   1. ***Escherichia coli*** (aka E.coli) forms a _____ relationship with humans.
   2. ***E. coli*** digests _____ (it's food source) that we can't breakdown (like CORN).
   3. Then, ***E. coli*** produces _____gas as a _____of digestion. (= flatulence)
   4. If ***E. coli*** comes in contact with our _____, we can get sick. So, wash up children!

Draw the intestinal cross section diagram from Slide #7 of the lecture.