

Digestive System

I. Introduction

- A. General functions of digestion
 - Ingestion & breakdown of materials
 - Mechanical & chemical digestion
 - Absorption
 - Elimination of remaining materials
- B. Comparative anatomy – types of digestive systems
 - Incomplete vs. complete

II. Human Digestive System

- A. Structures of the gastrointestinal (GI) tract
 - Oral cavity
 - Pharynx
 - Esophagus
 - Stomach
 - Small intestine
 - Large intestine
 - Rectum
 - Anus
 - Accessory organs
 - Salivary glands
 - Gall bladder
 - Liver
 - Pancreas
- B. Oral cavity & salivary glands
 - Mechanical digestion
 - Chemical digestion – starch breakdown
- C. Stomach
 - Storage
 - Mechanical digestion
 - Chemical digestion – proteins
- D. Small intestine
 - Chemical digestion – fats, proteins
 - Absorption
 - Segments:
 - Duodenum
 - Jejunum
 - Ileum
 - 3 levels of folding to increase surface area
 - Organ – circular folds
 - Tissue – villi
 - Cells – microvilli

BIO 102 General Biology
Lecture Outline

E. Liver

- Blood cell recycling
- Detoxification
- Nutrient & vitamin storage
- Bile production

F. Gall bladder

- Bile storage

G. Pancreas

- Endocrine & exocrine
- Digestive enzymes

H. Large intestine (colon)

- Absorption – water & vitamins
- Intestinal function
- Peristalsis
- Efficiency of digestion

III. Variations in Vertebrate Digestive Systems

A. Variations related to diet

- Herbivores
- Carnivores
- Omnivores

B. Examples

- Birds
- Ruminant herbivores
- Non-ruminant herbivores
- Carnivores