The Digestive System: Reviewing the Main Ideas

Part A
In the space provided, write the name of the organ of the digestive system that corresponds to the number on the illustration.

1. mouth
2. pharynx
3. esophagus
4. liver
5. gall bladder
6. stomach
7. spleen (not part of system)
8. intestines

Part B
Using the numbers 1 to 7, place the events of the digestive process in the correct order.

1. Peristalsis moves food down the esophagus and into the stomach.
2. Teeth begin mechanical digestion by chewing and grinding food.
3. Food is churned and mixed with gastric juices.
4. Starch is broken down by saliva.
5. Food moves into the small intestine.
6. Swallowing causes the epiglottis to close over the windpipe as food is forced into the esophagus.
7. Chemical digestion of fats, proteins, and carbohydrates are aided by bile from the liver and pancreatic fluid from the pancreas.
Complete the flowchart about the digestion of food. These terms may be used more than once: esophagus, feces, large intestine, liver, mechanical digestion, mouth, pancreas, pepsin, stomach.

Food enters the body through the (1) mouth, where (2) mechanical digestion takes place by chewing and digestive enzymes begin chemical digestion.

Food then moves through the (3) esophagus by peristalsis. It passes through the sphincter and into the (4) stomach.

The muscles in the stomach wall contract to break down the food and mix it with stomach secretions at about pH 2. These secretions contain (5) pepsin for digesting proteins.

In the small intestine, the (6) pancreas adjusts the pH to a little above pH 7 and provides digestive enzymes. The (7) liver produces bile, which is stored in the gall-bladder until it is needed. Most of the nutrients are absorbed through the villi.

In the (8) large intestines, water is absorbed, and the waste product becomes solid (9) feces, which are eliminated from the body.
In your textbook, read about the functions of the digestive system.

Use each of the terms below only once to complete the passage.

chemical  ✅ chyme  ✅ colon  ✅ enzymes  ✅ hormones  ✅
mechanical  ✅ small intestine  ✅ three  ✅ water  ✅

The digestive system has (1) three major functions. Digestion can be categorized as either (2) mechanical or (3) chemical.

Most nutrients are absorbed in the (4) small intestine. Accessory organs provide bile, (5) hormones, and (6) enzymes to aid digestion. (7) Water is absorbed from (8) chyme in the (9) colon.

Label the diagram of the digestive system. Use these choices:

esophagus  gallbladder  large intestine  liver  mouth
pancreas  salivary glands  small intestine  stomach
Study Guide, Section 1: The Digestive System  continued

In your textbook, read about the small and large intestines.

If the statement is true, write true. If the statement is false, replace the italicized term or phrase to make it true.

19. The **pancreas** produces bile, which helps the body break down fats.

   False

20. The largest internal organ of the body is the **liver**.

   True

21. The **salivary** produces enzymes, hormones, and an alkaline fluid.

   False

22. Fingerlike structures called **villi** absorb nutrients from food.

   True

23. The **appendix** is a small organ with no known function that sometimes gets infected.

   False

Complete the table by checking the correct column(s) for each function.

<table>
<thead>
<tr>
<th>Function</th>
<th>Small Intestine</th>
<th>Large Intestine</th>
</tr>
</thead>
<tbody>
<tr>
<td>24. Water is absorbed.</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>25. Mechanical digestion is completed.</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>26. Nutrients are absorbed.</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>27. Peristalsis happens.</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>28. Undigestible material is collected.</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>29. Bile and pancreatic juices are added.</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>30. Chemical digestion is completed.</td>
<td></td>
<td>✔</td>
</tr>
</tbody>
</table>

Respond to each statement.

31. State the function of the gallbladder.

   Stores and concentrates bile

32. Name the part of the digestive system where food spends the most time.

   Large intestines (12-24 hrs)
Section 2 - The Digestive System

Directions: Indicate which of the following digestive processes is at work in each organ shown in the diagram by writing the correct letter in the space provided.

A. mechanical digestion
B. chemical digestion
C. both
D. none

Directions: Answer the following questions on the lines provided.

9. Describe mechanical digestion.

When substances are physically broken down

10. Where is hydrochloric acid produced in the body?

Stomach

11. What is chyme?

A combination of food and gastric juices made in the stomach

12. What is peristalsis?

The movement of food by circular and longitudinal muscles down the alimentary canal.
HUMAN DIGESTIVE SYSTEM
CROSSWORD

Across
5. Chemical digestion of carbohydrates begins here. - mouth
6. Enzyme that begins the digestion of proteins - pepsin
8. Produced by the liver, this emulsifies fats to make digestion easier. - bile
10. Acid present in the stomach - HCl
11. Tube between the mouth and stomach - esophagus
12. Water and certain vitamins are absorbed here from the undigested food. - LG intestine

Down
1. Wastes are stored here before expulsion - rectum
2. Fingerlike projections which increase the surface area of the small intestine - villi
3. Long, convoluted tube where SI chemical digestion is completed
4. Enzyme present in saliva - Amylase
7. Involuntary muscle contraction that move the food through the digestive system - Peristalsis
8. Produced by the liver, this emulsifies fats to make digestion easier. - bile
9. In this muscular pouch, food is mixed with gastric juice - Stomach
Word Game

On the lines below, write the word or words that best fit the description on the left. When you are finished, the boxed-in letters will spell out one of the topics discussed in the chapter. Fill in the word or phrase in the space provided.

1. Produces gastric juice
2. Iron is an example of one
3. Produces juice that travels to the small intestine and digests proteins, starches, and fats
4. Body’s main source of energy
5. Food tube
6. Tooth that tears and shreds food
7. Parts of food the body can use
8. Solid waste
9. Enzyme found in saliva
10. Fingerlike projections found on the walls of the small intestine
11. To break down food into smaller substances
12. Substance produced by the liver
13. Flap of tissue that closes over windpipe
14. Chain of amino acids
15. Wavelike motion that pushes food downward
16. Where food goes after leaving stomach
17. Helps moisten food in the mouth
18. Unit used to measure the energy value of food
19. Chemical that helps to break down food

The physical action of breaking food into smaller parts

**Mechanical Digestion**
THE HUMAN DIGESTIVE SYSTEM

Label the following parts of the human digestive system on the diagram below.

a. mouth
b. salivary glands
c. esophagus
d. stomach
e. liver
f. pancreas
g. small intestine
h. large intestine
i. rectum
j. anus
k. appendix
l. gall bladder

Accessory Organs
Food does not pass through three organs in the digestive system. Label the three accessory organs in the diagram to the right.

m. liver
n. gall bladder
o. pancreas

Fill in the blanks below with the correct answers.

Food passes from the _______ to the _______ to the _______. and then to the _______, where gastric juices break up proteins and other molecules. From the stomach, food passes to the _______, where nutrients are absorbed into the body's bloodstream. Undigested material moves into the _______ or colon, where water is resorbed and the residual materials is compacted. This material, now known as feces, moves into the _______ where it is stored temporarily until it passes out of the _______. Above the stomach is the _______, which plays many important roles in digestion, and nested below the stomach is the _______, which secretes many of the digestive enzymes.
Section 16-3 Review and Reinforce

Final Digestion and Absorption

- Understanding Main Ideas

Place a check mark in the correct column.

<table>
<thead>
<tr>
<th></th>
<th>Small Intestine</th>
<th>Large Intestine</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Contains bacteria that feed on material passing through.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>2. Most absorption of nutrients occurs here.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>3. Is lined with villi.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>4. Is directly attached to the stomach.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>5. Prepares wastes for elimination from the body.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>6. Most chemical digestion occurs here.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>7. Receives bile and enzymes from other organs.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>8. Is the last section of the digestive system.</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

Answer the following questions on the back of this sheet.

9. What happens to the water contained in the materials that pass into the large intestine? **Reabsorbed by the body**

10. How does fiber aid digestion? **Bulks food to help move it through and keeps colon healthy**

- Building Vocabulary

Match each term with its function by writing the letter of the correct function on the line beside the term.

11. liver
12. gallbladder
13. pancreas
14. rectum
15. anus
16. bile
17. villus

- stores bile
- tiny finger-shaped structure in which absorption occurs
- solid wastes exit the body through this opening
- produces bile
- structure in which waste material is compressed into solid form
- produces enzymes that flow into the small intestine
- breaks up fat molecules
The Digestive System

Directions: Listed below are organs that aid in the digestion of food. Describe the function of each organ and label the figure.

1. mouth: mastication mechanically digests food and amylase breaks down starch
2. esophagus: passage way to stomach
3. stomach: mechanically digests food through churning, chemically digests proteins
4. small intestine: segmentation mechanically digests, pancreatic enzymes chemically digests and villi absorbs monomers
5. pancreas: produces enzymes and alkaline fluid that is transported to the SI
6. large intestine: absorbs water, extracts vitamins
7. liver: produces bile used to emulsify fat
8. gallbladder: stores and concentrates bile
9. rectum: retains feces waiting for defecation