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Question

1. In a tabular form only, compare and contrast sections of the Gastrointestinal tract

Answer

The gastrointestinal tract is an organ system within humans and which takes in food, digests it to extract and absorb energy and nutrients, and expels the remaining waste as feces.

It is divided into two sections:

- i. The upper GI tract
- ii. The lower GI tract

Contrast between the sections of the Gastrointestinal Tract	
Upper gastrointestinal tract	Lower gastrointestinal tract
<ol style="list-style-type: none">1. The upper GI tract is considered to be the mouth, esophagus, stomach, and finally the first part of the small intestine (duodenum).	<ol style="list-style-type: none">1. The lower GI tract runs from the small intestine to the large intestine (colon) to the anus.
<ol style="list-style-type: none">2.<ol style="list-style-type: none">i. Esophagus: the fibromuscular tube that food passes through—aided by peristaltic contractions—the pharynx to the stomach.ii. Stomach: which secretes protein - digesting enzymes called proteases and strong acids to aid in food digestion, before sending the partially digested food to the small intestines.iii. Duodenum: the first section of the small intestine that may be the principal site for iron absorption.	<ol style="list-style-type: none">2. The small intestine has three parts:<ol style="list-style-type: none">i. Duodenum: Here the digestive juices from the pancreas (digestive enzymes) and the gallbladder (bile) mix together. The digestive enzymes break down proteins and bile and emulsify fats into micelles. The duodenum contains Brunner’s glands that produce bicarbonate, and pancreatic juice that contains bicarbonate to neutralize hydrochloric acid in the stomach.ii. Jejunum: This is the midsection of the intestine, connecting the duodenum to the ileum. It contains the plicae circulares and villi to increase the surface area of that part of the GI tract.iii. Ileum: This has villi, where all soluble molecules are absorbed

	<p>into the blood (through the capillaries and lacteals).</p> <p>The large intestine has four parts:</p> <ol style="list-style-type: none"> i. Cecum, the vermiform appendix that is attached to the cecum. ii. Colon, which includes the ascending colon, transverse colon, descending colon, and sigmoid flexure. The main function of the colon is to absorb water, but it also contains bacteria that produce beneficial vitamins like vitamin K. iii. Rectum. iv. Anus.
3. The upper GI tract digests food and prepares it for processing and utilizing nutrients throughout the body	3. The upper GI tract absorbs nutrients from food. The remaining materials become stool and is expelled out of the body as waste

Comparisons between the sections of the GI tract	
A. The upper and lower sections of the GI tract both have 4 structural layers which are	
<ul style="list-style-type: none"> • Mucosa: which includes a columnar epithelium with numerous mucus-secreting goblet cells, lamina propria, and muscularis mucosa • Submucosa: which contains the blood vessels and Meissner's nerve plexus • Muscularis propria: which contains the inner circular and outer longitudinal muscles • Serosa: it covers the outer surface 	
B. Digestion and absorption are the primary functions of the sections of the gastrointestinal tract.	
C. The sections of the gastrointestinal tract are lined by a special layer of cells, called epithelium.	