1) Which of the following is secreted by the endocrine pancreas?
   a) Pepsinogen
   b) Gastrin
   c) Insulin
   d) Trypsinogen

2) Salivary secretion is stimulated by
   a) Somatostatin
   b) Secretin
   c) Acetylcholine
   d) Vasopressin
   e) Gastrin

3) The primary signal for secretion of pancreatic digestive enzymes is
   a) Secretin
   b) Cholecystokinin
   c) Bile salts
   d) Insulin
   e) Bicarbonate

4) The following statements are **true** regarding the mechanism of hydrogen secretion by the parietal cells of the stomach **except**:
   a) It depends upon sodium-hydrogen exchange at the lumen-facing membrane
   b) It depends upon the enzyme, carbonic anhydrase (CA)
   c) It is stimulated by histamine, acetylcholine, and gastrin
   d) H_2 receptor blockers inhibit it
   e) Requires ATP

5) Pancreatic digestive enzymes are
   a) Secreted by the jejunum.
   b) Activated in the duodenum.
   c) Stored in the gallbladder.
   d) Recycled via reabsorption by the distal ileum.
   e) Recycled via reabsorption by the colon.

6) The following statements are **true** regarding the mechanism of fat digestion and/or assimilation by the gastro-intestinal tract **except**:
   a) Occurs in the mouth.
   b) Occurs in the stomach.
   c) Requires functioning liver.
   d) Requires functioning gall bladder.
   e) Requires functioning ileum.

7) Secretory diarrhea is **NOT** caused by
   a) An imbalance between intestinal absorption and secretion.
   b) Inappropriate activation of intestinal chloride transport.
   c) Over activation of the sodium transport.
   d) Hypersecretion of sodium chloride.

8) Contractions of intestinal circular smooth muscle may be influenced by each of the following **EXCEPT**:
   a) Parasympathetic nerves
   b) Chemicals present in the lumen
   c) Somatic nerves
   d) Gastrointestinal hormones
   e) Enteric nerves

9) Dietary protein is absorbed in an the adult primarily
   a) in the stomach
   b) in the ileum
   c) as protein
   d) as free amino acids
   e) as di- and tri- peptides

10) Acid in the duodenum
   a) inhibits gastric acid secretion
   b) stimulates pancreatic bile acid secretion
   c) stimulates pancreatic bicarbonate secretion
   d) all of the above
   e) a and c

11) Which of the following secretions is **most** dependent on parasympathetic nerve (vagus) stimulation?
   a) Saliva
   b) Hydrochloric acid
   c) Pepsin
   d) Pancreatic juice
   e) Bile

12) Gastric acid secretion increases when food enters the stomach because
   a) Protein digestion products stimulate parietal secretion.
   b) Food lowers the pH of the stomach, allowing more acid to be released.
   c) Carbohydrate digestion products directly stimulate parietal cell secretion.
   d) Intrinsic factor potentiates the effect of gastrin on parietal cell secretion.

13) The Chief cell secretes
    a) Gastrin
    b) Motilin
    c) Cholecystokinin
    d) Pepsinogen
    e) Secretin

14) The major stimulus for gastric acid secretion during the cephalic phase is
    a) Histamine
    b) Gastrin
    c) Secretin
    d) Cephalic acid releasing factor
    e) Acetylcholine

15) The major stimulus for the release of secretin is/are
    a) Protein digestion products
    b) Histamine
    c) Somatostatin
    d) Hydrochloric acid
    e) Cholecystokinin

16) Fats are transported from intestinal cells to the vascular space primarily in the form of
    a) Micelles
    b) Chylomicrons
    c) Triglycerides
    d) Free fatty acids
    e) Bile salt conjugates

17) Intrinsic factor is necessary for absorption of
    a) Bile salts
    b) Iron
    c) Cholesterol
    d) Vitamin D3
    e) Vitamin B12

18) All of the following stimulate cholecystokinin secretion EXCEPT
    a) Amino acids
    b) Fatty acids
    c) Peptides
    d) Bile acids