1. Which of the following statements concerning gastric function is INCORRECT
   a. Acid is produced by the chief cells of the stomach
   b. Gastrin is produced by G-cells, primarily in the antrum
   c. Intrinsic factor is produced by parietal cells, found throughout the stomach
   d. Mucous cells are important in protection of the stomach from acid digestion
   e. Pepsinogen, produced by chief cells, begins the process of protein digestion

2. Fat soluble vitamins include all of the following EXCEPT:
   a. Vitamin A
   b. Vitamin C
   c. Vitamin D
   d. Vitamin E
   e. Vitamin K

For questions 3 and 4, use the following Answer Key:
   a. 1, 2, and 3 are correct
   b. 1 and 3 are correct
   c. 2 and 4 are correct
   d. only 4 is correct
   e. all are correct

3. *Helicobacter pylori* has been implicated in the pathogenesis of
   1. Chronic gastritis
   2. Gastric cancer
   3. Peptic ulcer
   4. Gastric lymphoma

4. Which of the following statements concerning tests for *H. pylori* is correct?
   1. Antibody tests for H. pylori are both sensitive and specific
   2. The CLO test measures urease activity in gastric biopsies and detects H. pylori indirectly by detecting a color change in a pH indicator
   3. Urease tests are more sensitive in patients taking proton pump inhibitors than in untreated patients
   4. Stool antigen tests detect current infection, and become negative with successful eradication of infection

5. All of the following statements concerning Zollinger-Ellison syndrome are true EXCEPT:
   a. Associated with recurrent gastric ulcers, often involving the duodenum
   b. Basal acid output (BAO) is usually over half of the maximal acid output (MAO)
   c. Diarrhea is often present and may be accompanied by steatorrhea
   d. Gastrin production by G-cell hyperplasia is the most common cause
   e. Tumors are often small, but metastatic tumor occurs in over half of cases

6. Which of the following statements concerning Multiple Endocrine Neoplasia (MEN), type 1, is correct?
a. Associated with tumors of the ovary and pheochromocytoma
b. Chromosome mutations are found on chromosome 11
c. Due to a mutation in the Ret oncogene
d. Occurs in women much more frequently than in men ((10:1)
e. Occurs sporadically with no inheritance pattern

7. Which of the following statements concerning laboratory diagnosis of Zollinger-Ellison (Z-E) syndrome is INCORRECT?
   a. Gastrin level over 4 times the upper reference limit is strongly suggestive of the disease
   b. It is important to document lack of achlorhydria before making the diagnosis of Z-E syndrome
   c. Provocative tests of gastrin production are more reliable than basal gastrin in establishing the diagnosis.
   d. Secretin is the most sensitive and specific secretory agent for the diagnosis of Z-E syndrome
   e. When secretin is given, gastrin should be checked at 1 and 2 hours after administration

8. Steps involved in the absorption of Vitamin B12 include all of the following EXCEPT
   a. Release of B12 from food by the action of gastric acid
   b. Binding of B12 to non-specific (R-binders) in the stomach
   c. Release of B12 from R-binders by the action of pancreatic bicarbonate
   d. Binding of B12 to intrinsic factor, produced by gastric parietal cells
   e. Absorption of B12 in the ileum when bound to intrinsic factor

9. All of the following might be abnormal in both malabsorption and maldigestion EXCEPT:
   a. Beta carotene level in plasma
   b. D-xylose absorption
   c. Fecal fat excretion
   d. Serum albumin
   e. Vitamin B12 absorption

10. The most sensitive test for malabsorption or maldigestion is:
    a. Beta carotene level in plasma
    b. D-xylose absorption
    c. Fecal fat excretion
    d. Serum albumin
    e. Vitamin B12 absorption

11. All of the following statements concerning celiac disease are correct EXCEPT:
    a. Antibodies to tissue transglutaminase are the most sensitive and specific marker of disease
    b. Antibodies to gliadin are present in most affected individuals
    c. Gluten, found in wheat and some other grain products, is the trigger for celiac disease
    d. Individuals with celiac disease are at high risk for developing carcinomas of the small bowel
    e. Use of a gluten free diet may lead to disappearance of circulating antibodies

12. Which of the following statements concerning lactose intolerance is correct?
    a. Associated with symptoms when beef or pork is ingested
b. Causes malabsorption syndrome in 50% of affected individuals  
c. Diarrhea after ingestion of lactose-containing foods is a common mode of presentation  
d. Most commonly seen in persons of European ancestry  
e. Usually requires lactose tolerance testing to establish the diagnosis

13. All of the following statements regarding carcinoid syndrome are true EXCEPT:
   a. Associated with flushing and diarrhea  
   b. Caused by carcinoid tumors, usually found in the distal ileum or appendix  
   c. Markedly increased urine excretion of 5-hydroxyindole acetic acid is seen in most cases of carcinoid syndrome  
   d. Metastasis to the liver is usually required before symptoms of carcinoid syndrome occur  
   e. Primary carcinoid tumors of the appendix are the single most common cause of carcinoid syndrome

14. Which of the following statements concerning inflammatory bowel disease is correct?
   a. Antibodies to neutrophil cytoplasmic antigens are often associated with Crohn’s disease
   b. Antibodies to Saccharomyces cerevisiae are commonly found in ulcerative colitis
   c. Autoimmune markers are found in about half of cases
   d. Both Crohn’s disease and ulcerative colitis typically affect the colon and rectum exclusively
   e. Specificity of these autoimmune markers is only about 50-60%

15. All of the following statements concerning tests for occult blood in stool is correct EXCEPT:
   a. Assays usually rely on the peroxidase activity of hemoglobin
   b. Drying of stool samples results in reduced sensitivity, so rehydration of cards before testing is usually recommended to reduce both false positive and false negative results
   c. Immunochemical methods for hemoglobin reduce the likelihood of false positive results due to plant peroxidases
   d. Immunochemical tests may be falsely negative is stool samples are contaminated by toilet bowl sanitizers.
   e. Restriction of meat in the diet is recommended to prevent false positive results

16. Correct statements concerning CEA and colorectal cancer include all of the following EXCEPT:
   a. CEA is a family of glycoprotein molecules rather than a single antigen
   b. CEA levels are usually highly reproducible between assays from different manufacturers
   c. Early colon cancer is associated with increased CEA in only about 25% of cases
   d. Increased CEA may also be due to smoking, liver disease, or inflammatory bowel disease
   e. The most important use of CEA is not in screening for colon cancer, but in follow-up of patients after surgery or other form of treatment

Answer:
1. a (p. 552)
2. b (p. 554)
3. e (p. 556)
4. c (p. 556)
5. d (p. 556-557)
6. b (p. 557)
7. e (p. 556-557)
8. c (p. 557)
9. b (p. 560-561)
10. c (p. 561)
11. d (p. 558)
12. c (p. 558)
13. e (p. 558-559)
14. c (p. 559)
15. b (p. 563)
16. b (p. 563)