Case Study
During the team’s road trip to the annual tri-state weekend tournament, the women’s softball coach, Coach Peggy, admits to you that she has had “stomach problems” for the past year. She stopped eating the Mexican food she loves and is making a point of eating a healthy breakfast of toast and orange juice. She also sucks on peppermint drops because she thought the mint would calm her stomach, but none of these steps have stopped her heartburn problem. Coach Peggy says it is worst at night when she tries to go to sleep. You tell her that she likely has gastroesophageal reflux disease (GERD) and advise her on things to avoid eating and drinking. You advise her to see her physician for diagnosis, assessment of complications, and medication therapy. Coach Peggy asks you what medications are available. How would you respond to this question?

Answer: For the treatment of GERD, 2 classes of medications are used. The proton-pump inhibitors (PPIs) decrease the secretion of gastric acid by inhibiting the action of the proton pump. The H₂-receptor antagonists block the histamine receptor that stimulates gastric acid production. By decreasing the acid in the stomach, these classes of medications decrease GERD symptoms and allow damage to the esophagus to heal. The PPIs are considered the drugs of choice for GERD.

Exam Questions
1. Which of the following agents is considered a bulk-forming laxative?
   a. Docusate.
   b. Psyllium.
   c. Mineral oil.
   d. Witch hazel.

2. The preferred class of drugs for treatment of GERD is the:
   a. PPIs.
   b. H₂-receptor antagonists.
   c. Antacids.
   d. Corticosteroids.

3. Antibiotics are used in combination with proton pump inhibitors in the treatment of peptic ulcer disease caused by the bacteria:
   a. Clostridium difficile.
   b. Helicobacter pylori.
   c. Escherichia coli.
   d. Streptococcus pyogenes.

4. A common adverse effect associated with calcium-containing antacids is:
   a. Diarrhea.
   b. Fluid retention.
   c. Headache.
   d. Constipation.

5. The antidiarrheal agent that is available over-the-counter (OTC) is:
   a. Diphenoxylate.
   b. Alosetron.
c. **Loperamide.**  
d. **Senna.**

6. A harmless darkening of the tongue is a potential side effect of:  
   a. Ranitidine.  
   b. **Bismuth subsalicylate.**  
   c. Sulfasalazine.  
   d. Magnesium hydroxide.

7. A medication that is used as a vasoconstrictor in topical products for hemorrhoid treatment is:  
   a. **Phenylephrine.**  
   b. Pramoxine.  
   c. Hydrocortisone.  
   d. Witch hazel.

8. An athlete has been experiencing symptoms of GERD for several weeks and has used an OTC PPI for symptom management. He now tells you that he is experiencing difficulty swallowing in addition to the frequent heartburn. What is the most appropriate action for the athletic trainer?  
   a. Instruct the athlete to double the dose of his OTC PPI.  
   b. **Refer the athlete to a physician for evaluation of GERD complications.**  
   c. Recommend that the athlete add an antacid to his treatment regimen.  
   d. Suggest the athlete switch from a PPI to an H₂-receptor antagonist.

9. OTC PPIs can be used for patients with frequent heartburn for a ____-day course of treatment.  
   a. 7.  
   b. **14.**  
   c. 21.  
   d. 28.

10. Lubiprostone is used in the treatment of:  
    a. Diarrhea-predominant irritable bowel syndrome (IBS) in women.  
    b. **Constipation-predominant IBS in women.**  
    c. Ulcerative colitis.  
    d. Crohn’s disease.