Chemical Examination of Urine
Lecture Review Questions

Question
• Ictotest detects lower levels of bilirubin in urine as compared to the bilirubin dipstick reaction
  – Dipstick reaction: ~0.5 mg/dl
  – Ictotest reaction: ~0.05-0.1 mg/dl
Which is more sensitive?

Question
• Clinitest reacts with all reducing substances
• Glucose reagent strip reacts with only one reducing substance: glucose
Which is more specific?

Question
• SSA reacts with all proteins
• Protein reagent strip reacts primarily with albumin
Which is more specific?

Question
• What is one advantage to the reagent strip specific gravity over the refractometer?
  • A. Measures only ionic solutes, which directly reflect renal status
  • B. No interference from radiographic dye
  • C. All of the above.

Question
• Why would highly alkaline urine give a false negative Exton’s Test?
Question

• Why might an improperly stored urine have a false negative glucose result?

• Why would an improperly stored urine give a false negative ketone result?

• What substance must be added to the chemical reaction to allow for the detection of acetone?

• Is it possible to have a positive blood test on the urine dipstick and not see any red blood cells in the microscopic?

• A patient has an amber color urine, but the dipstick is negative for bilirubin. Should an ictotest be performed?

Chemical Exam of Urine Review
1. The pH of urine includes which of the following ranges:
   a. 3.5 – 6.0
   b. 4.0 – 7.0
   c. 4.5 – 8.0
   d. 5.0 – 9.0

2. The reagent strip test for urine pH uses a ‘double indicator’ system. Which of the following indicator dyes are used in this reaction?
   a. Phenol red and thymol blue
   b. Methyl red and bromthymol blue
   c. Methyl red and thymol blue
   d. Phenol red and bromthymol blue

3. Match the following definitions:
   - Hematuria
   - Hemoglobinuria
   - Myoglobinuria

   • ___ Hematuria A. Muscle protein in urine
   • ___ Hemoglobinuria B. Intact RBC in urine
   • ___ Myoglobinuria C. Free hemoglobin in urine

   a. A, B, C
   b. B, C, A
   c. C, B, A
   d. B, A, C

4. Which of the following tests should be performed on all children <2 yrs of age?
   a. Protein
   b. Blood
   c. Clinitest
   d. Bilirubin

   Why?

5. The main difference between the refractometer and reagent strip test for the measurement of specific gravity is:
   a. Refractometer measures only ionic substances, strip test measures all solutes in solution
   b. Refractometer uses less sample
   c. Refractometer results are not affected by the presence of radiographic dye, or high levels of glucose or protein
   d. Reagent strip test measures only ionic substances, refractometer measures all solutes in solution

6. Ascorbic acid will cause a false negative result for which of the following reagent strip tests:
   a. glucose, urobilinogen, pH, bilirubin
   b. blood, bilirubin, glucose, nitrite
   c. protein, blood, ketones, pH
   d. ketones, nitrite, urobilinogen, protein