LESSON 5-3 Physical Examination of Urine
Student Performance Guide

LESSON 5-3 Physical Examination of Urine
Worksheet

LESSON 5-4 Chemical Examination of Urine
Student Performance Guide

LESSON 5-4 Chemical Examination of Urine
Worksheet

LESSON 5-5 Microscopic Examination of Urine Sediment
Student Performance Guide

LESSON 5-5 Microscopic Examination of Urine
Worksheet

LESSON 5-5 Microscopic Examination of Urine
Routine Urinalysis Report Form

LESSON 5-6 Urine Pregnancy Tests
Student Performance Guide
LESSON 5-3 Physical Examination of Urine

INSTRUCTIONS

1. Practice the procedure for performing a physical examination of urine following the step-by-step procedure and using the worksheet.

2. Demonstrate your understanding of this lesson by:
   a. Completing a written examination successfully, and
   b. Performing the procedure for the physical examination of urine satisfactorily for the instructor. All steps must be completed as listed on the instructor’s Performance Check Sheet.

Note: Consult manufacturers’ directions before using instruments or performing tests.

MATERIALS AND EQUIPMENT

- gloves
- hand disinfectant
- puncture-proof container for sharps
- clear plastic conical centrifuge tubes
- test tube rack
- fresh urine sample
- dropping pipet
- refractometer or urinometer
- distilled water
- urinalysis report form or worksheet
- soft tissue or soft paper towels
- biohazard container
- 10% chlorine bleach solution or other surface disinfectant
- urine control solutions

PROCEDURE

Record in the comment section any problems encountered while practicing the procedure (or have a fellow student or the instructor evaluate your performance).

<table>
<thead>
<tr>
<th>You must:</th>
<th>S</th>
<th>U</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Wash hands and put on gloves</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Assemble equipment and materials</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Obtain a fresh urine specimen. If specimen has been refrigerated,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>allow it to reach room temperature before proceeding with tests</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Record the specimen identification on the worksheet (or report form)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Mix the urine gently by swirling and pour approximately 10 mL into a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>clear, conical centrifuge tube</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

S = Satisfactory
U = Unsatisfactory

Estridge, B., Reynolds, A., and Walters, N. Basic Medical Laboratory Techniques. © 2000 Delmar, a division of Thomson Learning
You must: | S | U | Comments |
---|---|---|---|
6. Observe the color of the urine (straw, yellow, red, etc.) and record on the worksheet | | | |
7. Notice the odor of the urine. If unusual, record in comment section | | | |
8. Observe and record the appearance or transparency of the urine (clear, slightly cloudy, turbid) | | | |
9. Measure the specific gravity using both the refractometer and urinometer:
   a. Refractometer
      (1) Place one drop of distilled water on the glass plate of the refractometer and close gently
      (2) Look through ocular and read the specific gravity from the scale. For water, the specific gravity should read 1.000. (If it does not, calibrate with the screwdriver provided with the refractometer)
      (3) Wipe the water from the glass plate, place one drop of urine control solution on the plate and close gently
      (4) Look through the ocular, read the specific gravity from the scale, and record the control value
      (5) Clean the glass plate with disinfectant and dry with a soft tissue
      (6) Repeat steps 9a3–9a5 with a urine specimen, recording result
   b. Urinometer
      (1) Pour 40–50 mL of distilled water into the glass cylinder (approximately three-fourths full)
      (2) Insert urinometer gently, with spinning motion
      (3) Read the specific gravity from the scale on the stem of the urinometer as it stops spinning and record (Specific gravity of water should be 1.000)
      (4) Rinse equipment and dry with laboratory tissue and repeat 9b1–9b3 with urine specimen, recording result
10. Discard urine sample properly (or save specimen for chemical examination, Lesson 5–4) | | | |
11. Disinfect and clean equipment and return to proper storage | | | |
12. Clean work area with disinfectant | | | |
13. Remove and discard gloves appropriately | | | |
14. Wash hands with hand disinfectant | | | |

Evaluator Comments:

Evaluator ___________________________ Date ___________________________
# LESSON 5-3 Physical Examination of Urine

**Name ________________________________ Date ________________**

**Specimen I.D. __________________________________________________________**

<table>
<thead>
<tr>
<th>PHYSICAL EXAMINATION</th>
<th>OBSERVED RESULT</th>
<th>REFERENCE VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Appearance (transparency):</td>
<td>clear</td>
<td>clear</td>
</tr>
<tr>
<td></td>
<td>hazy (slightly cloudy)</td>
<td>straw to amber</td>
</tr>
<tr>
<td></td>
<td>cloudy (turbid)</td>
<td>1.005–1.030</td>
</tr>
<tr>
<td></td>
<td>other</td>
<td></td>
</tr>
<tr>
<td></td>
<td>describe _____________</td>
<td></td>
</tr>
<tr>
<td>2. Color:</td>
<td>____________</td>
<td>straw to amber</td>
</tr>
<tr>
<td>3. Specific gravity:</td>
<td>____________</td>
<td>1.005–1.030</td>
</tr>
</tbody>
</table>

**Comment: _____________________________________________________________
_______________________________________________________________________
_______________________________________________________________________
_______________________________________________________________________
_______________________________________________________________________
_______________________________________________________________________
### LESSON 5-4 Chemical Examination of Urine

**INSTRUCTIONS**

1. Practice the procedure for performing a chemical examination of urine following the step-by-step procedure.
2. Demonstrate your understanding of this lesson by:
   a. Completing a written examination successfully, and
   b. Performing the procedure for the chemical examination of urine satisfactorily for the instructor. All steps must be completed as listed on the instructor’s Performance Check Sheet.

**Note:** Consult reagent package inserts for manufacturers’ specific instructions before performing tests.

### MATERIALS AND EQUIPMENT

- gloves
- hand disinfectant
- fresh urine samples
- urine control solutions (normal and abnormal)
- reagent strips with color chart
- paper towels or laboratory tissues
- stopwatch or timer
- reagent strip reader (optional)
- clear, conical graduated centrifuge tubes
- forceps
- centrifuge
- heat-resistant test tubes, 13 x 100 mm and 16 x 125 mm
- test tube clamp
- dropping pipets
- distilled water
- 20% sulfosalicylic acid (or 3%)
- Clinitest® tablets
- Acetest® tablets
- Ictotest® tablets and absorbent pads
- test tube racks
- worksheet
- urinalysis report forms
- 10% chlorine bleach solution or other surface disinfectant
- biohazard container
- protective eyewear
- puncture-proof sharps container

### PROCEDURE

Record in the comment section any problems encountered while practicing the procedure (or have a fellow student or the instructor evaluate your performance).

<table>
<thead>
<tr>
<th>You must:</th>
<th>S</th>
<th>U</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Wash hands with disinfectant and put on gloves</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Assemble equipment and materials</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Obtain urine specimen and urine control solutions. If specimen has been refrigerated, allow it to reach room temperature before proceeding</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estridge, B., Reynolds, A., and Walters, N. *Basic Medical Laboratory Techniques*. © 2000 Delmar, a division of Thomson Learning
### You must:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>
| 4. Perform reagent strip test:  
  a. Dip reagent strip into urine sample, moistening all pads  
  b. Remove strip from urine immediately and tap to remove excess urine; blot edge on absorbent paper towels. Begin timing as strip is withdrawn from urine  
  c. Observe reagent pads and compare colors to color chart at appropriate time intervals  
  d. Record results on urinalysis worksheet  
  e. Discard reagent strip into biohazard container  
  f. Repeat 4a–4e using urine-control solution(s) | S | U |
| 5. Perform sulfosalicylic acid test for protein (usually performed only if protein is positive by reagent strip method):  
  a. Centrifuge 5 mL of urine  
  b. Place 4 mL of clear supernatant (from 5a) into a test tube  
  c. Add three drops of 20% sulfosalicylic acid (or add 4 mL of 3% sulfosalicylic acid)  
  d. Mix thoroughly and estimate the amount of turbidity after ten minutes  
  e. Record results on worksheet as negative, trace, 1+, 2+, 3+, or 4+ |   |   |
| 6. Perform Clinitest® for reducing substances:  
  a. Place a 16 x 125 mm test tube into a test-tube rack  
  b. Place five drops of urine into the test tube  
  c. Place ten drops of distilled water into the test tube  
  d. Drop a Clinitest® reagent tablet into the urine-water mixture using forceps  
  e. Observe color while allowing tablet to effervesce or boil until boiling stops and without touching the test tube  
  f. Wait fifteen seconds, shake test tube gently using test tube clamp, and compare color to color chart (tube will be hot and opening should be pointed away from your face)  
  g. Record results on worksheet as negative, 1/4%, 1/2%, 3/4%, 1%, or 2% or more  
  h. Repeat 6a–6g using urine-control solution(s) |   |   |
| 7. Perform Acetest® for ketones:  
  a. Place an Acetest® tablet on a clean piece of white paper towel or filter paper  
  b. Place one drop of urine on top of the tablet  
  c. Compare color of tablet to color chart at thirty seconds  
  d. Record results on worksheet as negative or positive  
  e. Repeat 7a–7d using urine-control solution(s) |   |   |
**You must:**

<table>
<thead>
<tr>
<th></th>
<th>S</th>
<th>U</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Perform Ictotest® for bilirubin:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a.</td>
<td>Place ten drops of urine on an Ictotest® mat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>Place an Ictotest® reagent tablet on the moistened area of the mat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>Let two drops of water flow onto the tablet</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Note:</strong> When elevated amounts of bilirubin are present in the urine specimen, a blue to purple color forms on the mat within sixty seconds. The rapidity of the color formation and the color intensity are proportional to the amount of bilirubin in the urine. A pink or red color is a negative result.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>Record results on worksheet as negative or positive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td>Repeat 8a–8d using urine-control solutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>If available, retest the urine specimen using a reagent strip reader. Compare the manual test results with those obtained with the strip reader</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Dispose of urine specimen properly, avoiding splashes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Dispose of test tube contents properly, avoiding splashes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Clean equipment and return to proper storage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Clean work area with surface disinfectant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Remove gloves and discard into biohazard container</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Wash hands with hand disinfectant</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Evaluator Comments:**

Evaluator ________________________________ Date _________________________
# LESSON 5-4 Chemical Examination of Urine

Name _________________________________________________________________ Date ______________________

Specimen I.D. ______________________________________________________________________________________

## Chemical Examination

<table>
<thead>
<tr>
<th>REAGENT STRIP</th>
<th>OBSERVED RESULT</th>
<th>REFERENCE VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td></td>
<td>5.5-8.0</td>
</tr>
<tr>
<td>Protein</td>
<td></td>
<td>negative, trace</td>
</tr>
<tr>
<td>Glucose</td>
<td></td>
<td>negative</td>
</tr>
<tr>
<td>Ketone</td>
<td></td>
<td>negative</td>
</tr>
<tr>
<td>Bilirubin</td>
<td></td>
<td>negative</td>
</tr>
<tr>
<td>Blood</td>
<td></td>
<td>negative</td>
</tr>
<tr>
<td>Urobilinogen</td>
<td></td>
<td>0.1–1.0 EU/dL</td>
</tr>
<tr>
<td>Nitrite</td>
<td></td>
<td>negative</td>
</tr>
<tr>
<td>Leukocyte esterase</td>
<td></td>
<td>negative</td>
</tr>
<tr>
<td>Specific gravity</td>
<td></td>
<td>1.005–1.030</td>
</tr>
</tbody>
</table>

## Confirmatory Test Results

### (circle result)

- **Protein (sulfosalicylic acid)**
  - negative
  - trace
  - 1+
  - 2+
  - 3+
  - 4+

- **Reducing substances (Clinitest®)**
  - negative
  - 1/4%
  - 1/2%
  - 3/4%
  - 1%
  - 2% or more

- **Ketones (Acetest®)**
  - negative
  - positive

- **Bilirubin (Ictotest®)**
  - negative
  - positive

- Other _________________________ ________
LESSON 5-5 Microscopic Examination of Urine Sediment

INSTRUCTIONS

1. Practice preparing and examining urine sediment following the step-by-step procedure.
2. Demonstrate your understanding of this lesson by:
   a. Completing a written examination successfully, and
   b. Performing the procedure for preparing and examining urine sediment satisfactorily for the instructor. All steps must be completed as listed on the instructor’s Performance Check Sheet.

Note: Follow instructions on the package insert for the system being used

MATERIALS AND EQUIPMENT

- gloves
- urine controls
- hand disinfectant
- fresh urine samples
- centrifuge
- microscope
- worksheet (urinalysis report form)
- 10–20% chlorine bleach solution or other surface disinfectant
- biohazard container
- puncture-proof biohazard container for sharp objects
- stopwatch or timer (if centrifuge lacks timer)
- visuals depicting various components of urine sediment or prepared slides of urinary sediment
- commercial standardized urine system or the following materials:
  - microscope slides
  - cover glasses
  - disposable pipets
  - conical graduated centrifuge tubes

PROCEDURE

Record in the comment section any problems encountered while practicing the procedure (or have a fellow student or the instructor evaluate your performance). S = Satisfactory U = Unsatisfactory

<table>
<thead>
<tr>
<th>You must:</th>
<th>S</th>
<th>U</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Wash hands and put on gloves. Assemble equipment and materials</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Practice microscopic identification of urine sediment using urine-control solutions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Obtain a urine sample</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Pour 10–15 mL of well-mixed urine into a clean conical centrifuge tube (or tube from standardized system)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You must:</td>
<td>S</td>
<td>U</td>
<td>Comments</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>----------</td>
</tr>
<tr>
<td>5. Place filled tube in centrifuge, insert balance tube, and close lid (centrifuge must be balanced)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Centrifuge at 1500–2000 rpm for five minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Remove tube from centrifuge after rotor stops spinning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Pour off supernatant urine, leaving approximately 0.5 mL of urine in tube (follow system instructions if applicable)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Resuspend urine sediment by tapping the bottom of the tube</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Place one drop of resuspended urine onto a clean glass slide or into chamber provided with the system</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Place coverslip over drop of urine if using glass slide</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Place slide on microscope stage and focus using low-power (10X) objective and lowered condenser</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Scan ten to fifteen low-power fields, count the number of casts per field, and record the average</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Identify the type(s) of casts present and record</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Rotate the high-power (40X) objective into position (raise condenser if necessary)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Scan ten to fifteen fields on high power</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Count the number of RBC, WBC, and epithelial cells per high-power field and record the average for each</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Observe the sample for the presence of microorganisms, crystals, or mucus, and record if present. If crystals are present, identify type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Complete the urinalysis report form or worksheet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Discard specimen tube and pipet appropriately; avoid aerosol formation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Discard slide in puncture-proof biohazard container</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Clean and return equipment to proper storage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. Clean work area with surface disinfectant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. Remove and discard gloves appropriately</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. Wash hands with hand disinfectant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. Use unlabeled illustrations or pre-prepared slides of urine sediment provided by the instructor to identify components of sediment not seen on slides.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Evaluator Comments:

Evaluator __________________________________________ Date _________________________

Estridge, B., Reynolds, A., and Walters, N. *Basic Medical Laboratory Techniques*. © 2000 Delmar, a division of Thomson Learning
**Worksheet**

**LESSON 5-5 Microscopic Examination of Urine**

Name _________________________________________________________________ Date ______________________

Specimen I.D. ______________________________________________________________________________________

**Microscopic Examination**

<table>
<thead>
<tr>
<th>Test</th>
<th>Reference Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>WBC:</td>
<td>0–4</td>
</tr>
<tr>
<td>RBC:</td>
<td>rare</td>
</tr>
<tr>
<td>Epithelial cells:</td>
<td>occasional (higher in females)</td>
</tr>
<tr>
<td>Casts:</td>
<td>occasional, hyaline</td>
</tr>
<tr>
<td>Yeasts</td>
<td>negative 1+ 2+ 3+ 4+</td>
</tr>
<tr>
<td>Bacteria</td>
<td>negative 1+ 2+ 3+ 4+</td>
</tr>
<tr>
<td>Mucus:</td>
<td>negative 1+ 2+ 3+ 4+</td>
</tr>
<tr>
<td>Crystals:</td>
<td>none seen present</td>
</tr>
<tr>
<td>Other:</td>
<td></td>
</tr>
</tbody>
</table>

Estridge, B., Reynolds, A., and Walters, N. *Basic Medical Laboratory Techniques*. © 2000 Delmar, a division of Thomson Learning
Routine Urinalysis Report Form

LESSON 5-5 Microscopic Examination of Urine

Name _________________________________________________________________ Date ______________________
Specimen I.D. ______________________________________________________________________________________

1. Physical Examination

   Transparency:  
   ______ clear
   ______ hazy (slightly cloudy)
   ______ cloudy

   Color:  
   __________________

   Specific gravity:  
   __________________

2. Chemical Examination

   A. Reagent Strip

   pH  
   __________

   Protein  
   __________

   Glucose  
   __________

   Ketone  
   __________

   Bilirubin  
   __________

   Blood  
   __________

   Urobilinogen  
   __________

   Bacteria (nitrite)  
   __________

   Leukocyte esterase  
   __________
B. Confirmatory Test Results (circle results)

Protein (sulfosalicylic acid): negative trace 1+ 2+ 3+ 4+
Reducing substances (Clinistest®): negative 1/4% 1/2% 3/4% 1% 2% or more
Ketones (Acetest®): negative positive
Bilirubin (Ictotest®): negative positive

3. Microscopic Examination

REFERENCE VALUES

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Reference Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>WBC:</td>
<td>0-4</td>
</tr>
<tr>
<td>RBC:</td>
<td>rare</td>
</tr>
<tr>
<td>Epithelial cells</td>
<td>occasional (higher in females)</td>
</tr>
<tr>
<td>Casts:</td>
<td>occasional, hyaline</td>
</tr>
<tr>
<td>Crystals:</td>
<td>none seen</td>
</tr>
<tr>
<td></td>
<td>present</td>
</tr>
<tr>
<td></td>
<td>(type)</td>
</tr>
<tr>
<td>Amorphous deposits:</td>
<td>none seen</td>
</tr>
<tr>
<td></td>
<td>present</td>
</tr>
<tr>
<td>Yeasts: (circle result)</td>
<td>negative 1+ 2+ 3+ 4+ negative</td>
</tr>
<tr>
<td>Bacteria: (circle result)</td>
<td>negative 1+ 2+ 3+ 4+ negative</td>
</tr>
<tr>
<td>Mucus: (circle result)</td>
<td>negative 1+ 2+ 3+ 4+ negative to 2+</td>
</tr>
<tr>
<td>Other: (circle result)</td>
<td></td>
</tr>
</tbody>
</table>

Tech/Student ____________________________ Date _________________________
INSTRUCTIONS

1. Practice performing an immunological test for pregnancy following the step-by-step procedure.
2. Demonstrate your understanding of this lesson by:
   a. Completing a written examination successfully, and
   b. Performing the pregnancy test procedure satisfactorily for the instructor. All steps must be completed as listed on the instructor’s Performance Check Sheet.

Note: The procedures given are general. Always consult and follow the manufacturer’s instructions for the kit being used.

MATERIALS AND EQUIPMENT
- gloves
- hand disinfectant
- urine specimen
- stopwatch
- surface disinfectant (10% chlorine bleach solution)
- biohazard container
- hCG negative urine control
- hCG positive urine control
- pregnancy test kit—EIA or slide test: pregnancy test kits should include slide or test unit, dispensers, reagents, etc.

PROCEDURE

Record in the comment section any problems encountered while practicing the procedure (or have a fellow student or the instructor evaluate your performance).

You must:  

1. Wash hands and put on gloves

2. Perform a modified EIA for hCG, following the manufacturer’s instructions
   a. Obtain test kit materials, reagents, and urine specimen
   b. Apply urine to the test unit using the dispenser provided
   c. Wait appropriate time interval (use stopwatch to time test)
   d. Apply first reagent/antibody to test unit using dispenser provided
   e. Rinse unreacted reagent from unit after appropriate time
   f. Apply color reagent/substrate to test unit
   g. Observe color development after appropriate time interval
   h. Stop reaction
   i. Record results. Always consult manufacturer’s package insert to interpret test results
   j. Repeat steps 2a–i using both positive and negative urine controls
You must:

3. Perform an agglutination inhibition test for hCG, following the manufacturer's instructions (if test is not available, go to step 4)
   a. Obtain slide test kit, reagents, and urine specimen
   b. Place one drop of antiserum in the center of the circled area of slide
   c. Dispense one drop of urine beside the drop of antiserum
   d. Mix urine and antiserum with stirrer provided
   e. Rock the slide in a figure-eight motion for the appropriate time, usually one to two minutes (use stopwatch to measure time)
   f. Apply one drop of well-mixed indicator particles to mixture on slide
   g. Mix indicator particles with antiserum-urine mixture and spread the mixture over the entire circled area of the slide using a stirrer
   h. Rock slide slowly in a figure-eight motion for the appropriate time (usually one to two minutes)
   i. Observe slide for agglutination at the end of the time interval and record the results (no agglutination = positive; agglutination = negative)
   j. Repeat steps 3a–3i using positive and negative urine controls

4. Disinfect reusable equipment by soaking in 10% chlorine bleach solution a minimum of ten minutes. Wash and rinse thoroughly

5. Discard disposable supplies in biohazard container

6. Dispose of specimen as instructed

7. Clean work area with surface disinfectant

8. Remove gloves and discard in biohazard container

9. Wash hands with hand disinfectant

Evaluator Comments:

Evaluator ___________________________________________________________________ Date _________________________

Estridge, B., Reynolds, A., and Walters, N. Basic Medical Laboratory Techniques. © 2000 Delmar, a division of Thomson Learning