MLAB 2401: Clinical Chemistry
Ace Axcel
Getting Started- Single sample placement
Skills= 5 points

Objectives:
Upon completion of this exercise, the student will be able to:

1. Perform the procedures for daily start up on the Ace Axcel.
2. Create a quality control requisition.
3. Request a calibration for a single test.
4. Create a requisition for a new patient.
5. Order test(s) for a patient sample.
6. Load and run samples.
7. Read, interpret, and act on the quality control report.
8. Read, interpret and act on the patient results interpretation report.

Materials:

1. Clinical Chemistry analyzer- the Ace Axcel
2. Pipets
3. Reagents- glucose
4. Sample cups
5. Sample seglets
6. QC materials (Level 1 and Level 2)
7. Calibrator (GEM-Cal)

References:

1. Alfa Wasserman Ace Axcel Package inserts (glucose)
2. Alfa Wasserman Ace Axcel operator's guide

Purpose:
The purpose of this exercise is to introduce the student to the various aspects of the ACE Axcel system.

Procedure:

1. The instructor will give the class an overview of the Ace Axcel, using a PowerPoint demonstration.
2. The instructor will break the class into smaller focus groups to introduce system components at the instrument.
    a. Power Check
        i. Look for green lights on the:
            1. UPS
            2. Monitor
            3. Printer
        ii. Are the instrument fans on?

3. Perform daily maintenance
    a. **Remove Condensation from Reagent Compartment**
        i. Press {F12} key or the Instrument Access tab
            1. Select **Reagents**
                a. Wait for the access door to unlock.
                b. If the reagent tray is in the compartment, lift it out and set on a level surface.
                c. Inspect the compartment and camera lenses for condensation. Remove any moisture using a lint-free cloth, such as a Kim-Wipe.
                d. Replace the reagent tray.
                e. Close the cover and press F10.
                f. While the instrument is in standby, moisten the cotton tip of an applicator stick with 70% isopropyl alcohol.
                g. Clean the entire probe pathway, including the area surrounding each of the openings.
                h. Using an alcohol prep pad, clean the surface of the plate that covers the wash bath and around the opening of the plate.
                i. Hit the arrow back or hit ESC to return to the main menu.
        ii. **Clean exterior of probe and align probe**
            1. Select **Utilities** from the main menu.
            2. Select **Probe** to display the align probe screen.
            3. Select **Position Transfer Arm to ISE PORT** and press Enter. This will move the probe to the ISE port crosshairs.
            4. At this point, examine the position of the probe, it should be positioned at the center of the crosshairs.
            5. Take an alcohol pad and wipe the outside of the probe, starting from the top of the probe and wiping downwards to the tip.
            6. Moisten a lint-free cloth with Di H20 and wipe the probe from top to bottom to remove any traces of alcohol.
            7. Press Enter when cleaning complete to reposition the probe at the crosshairs.
            8. Verify that the probe is aligned.
            9. Select **Test alignment at washbath** and verify probe alignment. ** Observe the probe during the test. Verify that the probe is positioned in the middle of the “U” located on the left side of the alignment plate.
            10. Press ESC until main menu is displayed. The system will initialize at this point.
        iii. **Clean and Condition the ISE- if applicable**
            1. Select **Utilities** from the Main Menu.
            2. Select **ISE** from this menu**.**
            3. Select **CALIBRATE, CONDITION, CLEAN.** A check mark will be placed by each selection.
            4. Press F10 to initiate the cycles. Look for any messages as the procedure is carried out. This takes about 13 minutes to perform.

4. Identify what controls and calibrators that you will need to run your test(s).

a. Refer to the package insert sheets and reconstitute as needed.

5. Identify the reagents on the reagent tray and assess the volumes of each.
    a. Hit {F3} or the STATUS tab
    b. Select **Reagent tray**
        i. Are the volumes OK?
        ii. Are the proper reagents on-board? If not, add them..
        iii. Are the bottles within acceptable limits?
        iv. Discard any old or empty reagents and replace with fresh reagent
            1. Use {F12} key to replace or add
            2. Hit accept, then ESC
6. What tests need to be calibrated?
    a. Select Instrument Status tab
    b. Look at calibration status screen for the test(s) to be run.
    c. Hit ESC
7. Are there any old segments to remove from the sample ring?
    a. From the STATUS menu, select Sample Ring status screen, if reagents are empty or expired, remove these now.
    b. Use {F12}, segment menu, hit remove. Select the segments to remove. The tray will move the wheel into position to remove the segment.
    c. Follow screen prompts
8. Find out how many cuvettes are in your hopper. Do you have enough to run your tests?
    a. Use {F12} and select hopper to add more cuvettes, if needed.
    b. Follow prompts on the screen.
9. Create Requisitions
    a. Create a calibration requisition (**if needed**)
        i. Main Menu, select **Requisitions**
        ii. Select **Calibration**
        iii. Enter the test or panel name to calibrate, use F2 or tab choice list, to view analytes.
        iv. Press {F10} Accept
        v. At the calibration loadlist display, enter any unused segment number (from 1-99), then press Enter.
        vi. Place cups according to the order on the loadlist
        vii. Press **{F7} Place Segment**, and place cup segment onto sample ring.
        viii. Close the Segment Access cover and press {F10} to accept
    b. Create a **QC** requisition (**if needed**)
        i. Main Menu, select **Requisitions**
        ii. Select **Quality Control**
            1. Select either Level 1 “L1” or Level 2 “L2”
                a. Press {F5} to delete results if running the same tests
                b. Press {F6} to delete tests if running different tests
            2. Select the tests to run on your QC panel. Select F2 or choice list to look for ordered tests and select.
            3. Press {F10} to accept.
            4. Do the same procedure for L2 Control
    c. Create a patient requisition

i. Main menu, select **Requisitions.**
ii. Select **Patient.**
iii. **Press {INS} Insert and enter the following: (as an example)**
    1. Name: Amy Reynolds
    2. Patient ID: 13353
    3. Age : 23
    4. Sex: F
    5. Tests ordered : glucose (GLU)
iv. Press **ENTER**.
v. Press **{F7} Place Sample,** then press **{F7} Place Sample** again**.**
vi. Wait for the instrument access prompt. Place the sample cup onto the designated position as indicated by the black arrow.
vii. Close the segment access door and press {F10} accept.
viii. Review your patient printout.
ix. Put your name on your printout and upload this into Blackboard as your patient report form.

10. End of day shutdown
    a. Main menu, press {F12}(Fn+F2) Instrument Access
    b. Select **Containers**. Verify fluid volume, empty cuvette and liquid waste. If cuvette or liquid waste is emptied press **{F10} Accept**.
    c. Select **Segment**, select **Remove**
        i. Using the ENTER key, select the segment to be removed. The instrument will bring the segment to the front for removal and the access door will open.
        ii. Remove the segment close the access door, press **{F10} Accept**.
    d. Go to the Instrument Access screen and select Reagents.
        i. Remove any reagents, then press **{F10} Accept**.

Name:_____

Ace Axcel- Getting started
Study Questions
Points= 28

Instructions: Using textbook and lecture notes, fill in the table. Each answer worth 0.5 points.

HORMONAL ACTIVITY AFFECTING SERUM GLUCOSE LEVELS		
HORMONE	**SOURCE**	**ACTION**
Insulin		1. Increase/ Decrease serum glucose 2. 3.
Glucagon		1. Increase/ Decrease serum glucose 2. 3.
ACTH		1. Increase/ Decrease serum glucose 2. 3.
Growth Hormone		1. Increase/ Decrease serum glucose 2. 3.
Cortisol		1. Increase/ Decrease serum glucose 2. 3.
Epinephrine		1. Increase/ Decrease serum glucose 2. 3.
Thyroid hormones		1. Increase/ Decrease serum glucose 2. 3.