Operation of ORION 310 pH meter

Materials and Reagents:
1. Orion 310 pH meter
2. Sample to be analyzed
3. Magnetic stir plate
4. Magnetic stir bar
5. Appropriate acid or base to adjust pH
6. pH 4, 7, 10 calibration buffers (Beckman 582517, 582521 and, 582525 respectively)
7. ddH2O water bottle
8. Discard beaker
9. Probe storage buffer (Thermo Orion 910001)
10. Ag/AgCl probe filling buffer (Thermo Orion 900011) (note 1)

Protocol:
1. _____ Select two appropriate calibration buffers to bracket expected sample pH.
2. _____ Press CAL key to initiate calibration sequence.
3. _____ Select calibration range based on selected calibration buffers using the SCROLL (8, ) keys.
4. _____ Press yes to accept desired range.
5. _____ pH 7 will be displayed for two seconds.
6. _____ Thoroughly rinse probe with ddH2O and place in pH 7 calibration buffer.
7. _____ The reading will then be displayed and updated as calibration continues.
8. _____ When the ready light comes on indicating probe stability press YES key to accept.
9. _____ pH 4 (or 10) will then be displayed for two seconds.
10. _____ Thoroughly rinse probe with ddH2O and place in pH 4 (or 10) calibration buffer.
11. _____ When the ready light comes on indicating probe stability press YES key to accept.
12. _____ The meter will automatically go into the measure mode.
13. _____ Thoroughly rinse probe with ddH2O and place in pH 7 calibration buffer to confirm calibration.
14. _____ Thoroughly rinse probe with ddH2O and place in stirring sample to be analyzed.
15. _____ The ready light will come on indicating probe stability and the respective pH will be displayed.
16. _____ Adjust sample pH to desired point with appropriate acids or bases. The ready light will come on indicating probe stability and the respective pH will be displayed.
17. _____ Thoroughly rinse probe with ddH2O and place in probe storage buffer (note 2).

Notes:
1. Do not allow fill solution to run dry. Add fill solution whenever the level falls more than 25 mm below fill hole. Replace fill solution at least bimonthly.
2. pH probe must be stored submerged in storage buffer when not in use.
Reference:
Orion PerpHecT® METER MODELS 310, 320, 330 Instruction Manual