**VOLUMETRIC ANALYSIS PRACTICAL TEST APRIL 2019 (Total students = 160)**

**EQUIPMENT PER STATION**:

Retort stand and burette clamp

Burette – 50ml, brown markings

Pipette – 20ml, brown markings

Pipette filler – bulb & P.I. pump

Funnel - glass

Methyl Orange indicator – dropper bottle

Phenolphthalein indicator – dropper bottle

White card – laminated

Conical flasks x3 – 250ml

Wash bottle – distilled water

Disposable Pasteur pipette

Solutions – 100ml, labeled, in 250ml beaker

Bench mat

Paper towel

**SOLUTIONS PROVIDED:**

**HYDROCHLORIC ACID 0.1M**

Make 16L: 160ml 10M diluted to 16L in distilled water

Make a batch of 6L (60ml conc/6L) and a batch of 10L (100ml conc/10L) and mixed together by transferring back & forth between 2 containers.

**SODIUM CARBONATE / SODIUM CHLORIDE SOLUTION**

**Three different solutions required. Solutions to be changed in vacant sessions between classes to prevent cheating**

Make three 5L solutions, each enough for 50 students

Each solution has 0.0400M solution of Na2CO3 made as follows:

**MW Na2CO3 = 105.99**

**For 0.04M: 105.99 x 0.04 = 4.2396g/L**

**= 21.198g Na2CO3 / 5L**

SOLUTION ONE:

Add 21.198g of NaCl

Total mass with Na2CO3 = 42.396g/5L

SOLUTION TWO:

Add ½ x 21.198 g = 10.599g of NaCl

Total mass with Na2CO3 = 31.797g/5L

SOLUTION THREE:

Add 2/3 x 21.198 g = 14.132g of NaCl

Total mass with Na2CO3 = 35.330g/5L