

EXPERIMENT 6

Date:

OBJECTIVE:

Estimation of Alkalinity in sample water

CHEMICALS REQUIRED:

1. Sulphuric acid N/50- Prepare 1N sulphuric acid by adding 35ml distilled water in one ml of conc. ml of conc. sulphuric acid. Add 49 ml of water to 10ml of 1N sulphuric acid.
2. Phenolphthalein indicator – Dissolve 5g of Phenolphthalein in one litre of 50% alcohol, C₂H₅OH.
3. Methyl orange indicator – Dissolve 5g of methyl orange in one litre of distilled water.

APPARATUS REQUIRED:

Burette, 1ml pipette, conical flask and a white tile

PROCEDURE

1. Place 100ml of sample water each in two conical flasks.
2. In one flask add 0.5ml phenolphthalein indicator. If the sample becomes pink titrate it with N/50 sulphuric acid from burette until pink colour disappears.
3. Record the ml of acid used. Add 2 drops of methyl orange indicator in both the conical flasks and titrate them with N/50 sulphuric acid.
4. The end point is orange.
5. Record the ml of acid used both in phenolphthalein and methyl orange titration.

CALCULATION

$$\text{Total Alkalinity} = \frac{\text{No. of ml of N/50 H}_2\text{SO}_4 \text{ consumed} \times 1000}{\text{Vol of sample}}$$

mg/l

Experiment 06

Date:

Sample No	Point of Collection	Observed Levels	Date of Collection	Time of Collection	Recommendations

Rough work

EXPERIMENT 7

Date:

OBJECTIVE:

Estimation of Hardness in sample water

CHEMICALS REQUIRED:

1. Erichrome black –T indicator – Dissolve 0.1g of Erichrome black –T in 20 ml of ethyl alcohol.
2. Ammonia buffer – Dissolve 6.75 of ammonium chloride (NH_4Cl) in 58ml of liquid ammonia and dilute to 100ml with distilled water.
3. Standard EDTA solution – Dissolve 4g of sodium salt of EDTA and 0.1g of MgCl_2 in 800ml of distilled water.

APPARATUS REQUIRED:

Burrete, 1ml pipette, conical flask and a white tile

PROCEDURE

1. Take 100ml of the sample water in a conical flask.
2. Add 1ml of ammonia buffer and 3 drops of Erichrome Black T Indicator.
3. Titrate with standard EDTA solution till the colour changes from wine red to blue.
4. Record the ml of EDTA solution used.

CALCULATION

$$\text{Total Hardness} = \frac{\text{No. of ml of EDTA solution used} \times 1000 \text{ mg/l}}{\text{ml of sample}}$$

Experiment 07

Date:

Sample No	Point of Collection	Observed Levels	Date of Collection	Time of Collection	Recommendations

Rough work

EXPERIMENT 8

Date:

OBJECTIVE:

To analyze the pH of the water sample

APPARATUS REQUIRED:

pH probe, Beaker, Distilled water, Tissue Paper

PROCEDURE

1. Stir the water sample vigorously using a clean glass stirring rod.
2. Standardize the pH meter by means of the standard solutions provided. Immerse the electrode(s) of the pH meter into the water sample and turn the beaker slightly to obtain good contact between the water and the electrode.
3. The electrode(s) require immersion 30seconds or longer in the sample before reading to allow the meter to stabilize. If the meter has an auto read system, it will automatically signal when stabilized.
4. Read and record the pH value to the nearest tenth of a whole number
5. Rinse the electrode(s) well with distilled water, then dab lightly with tissues to remove any film formed on the electrode(s).

Experiment 08

Date:

Sample No	Point of Collection	Observed Levels	Date of Collection	Time of Collection	Recommendations

Rough work

EXPERIMENT 9

Date:

OBJECTIVE:

To analyze the Transparency of pond water

APPARATUS REQUIRED:

Secchi Disc and Meter Ruler

PROCEDURE

1. Keep lowering the disk slowly until it disappears. Note the depth on the cord using meter scale.
2. Slowly pull the disk up until you see it again. Note the depth on the cord using meter scale.
3. Record the average depth on the Secchi data sheet along with the date and time of the reading.

Experiment 9

Date:

Sample No	Point of Collection	Observed Levels	Date of Collection	Time of Collection	Recommendations

Rough work

