# EWCE 332

## Environmental Engineering Sessional

| Sl. No. | Name of the Experiment/Assignment |
|---|---|
| 1 | Determination of pH in water |
| 2 | Determination of Color in water |
| 3 | Determination of Turbidity in water |
| 4 | Determination of TS, TDS and TSS in water |
| 5 | Determination of $CO_2$ in water |
| 6 | Determination of Alkalinity in water |
| 7 | Determination of Hardness in water |
| 8 | Determination of Chloride in water |
| 9 | Determination of Total Iron in Water |
| 10 | Determination of Arsenic in water |
| 11 | Determination of Bio-chemical Oxygen Demand |
| 12 | Determination of Chemical Oxygen Demand |
| 13 | Alum Coagulation |
| 14 | Break Point Chlorination |
| 15 | Determination of Total and Fecal Coliform in water |

## Distribution of Marks:

| | | |
|---|---|---|
| Conduct of Lab tests/Class Performance | | 15% |
| Report/Programming | 25% | |
| Mid-Term Evaluation | 25% | |
| Final Evaluation | 30% | |
| Viva/Presentation | 5% | |
| Total Marks | 100% | |

# Water Quality Parameters

**Physical Parameters:**
those characteristics of water that respond to the senses of sight, touch or smell-
Suspended Solids, Turbidity, Color, Taste and odor, Temperature

**Chemical Parameters:**
related to solvent capabilities
of water-Total Dissolved Solids, Alkalinity, Hardness, Dissolved Metals, Chloride, Fluoride, Organics, Nutrients

**Biological Parameters:**
Water may serve as a medium for hundreds and thousands of biological species-
Pathogens

# Water Sampling and Preservation Methods

- If sampling a body of running water, point the mouth of the bottle upstream and your hands downstream
- If sampling from a water faucet, run the faucet for 1 minute before obtaining a sample.
- Rinse the bottle twice with the sample water prior to filling and closing.
- Fill the bottle as full as possible.
- Make records to identify every bottle e.g., take notes.
- Some analysis require samples to be collected in colored bottles.
- Commonly used preservation methods-pH control, chemical addition, the use of opaque bottles, refrigeration, filtration, and freezing.

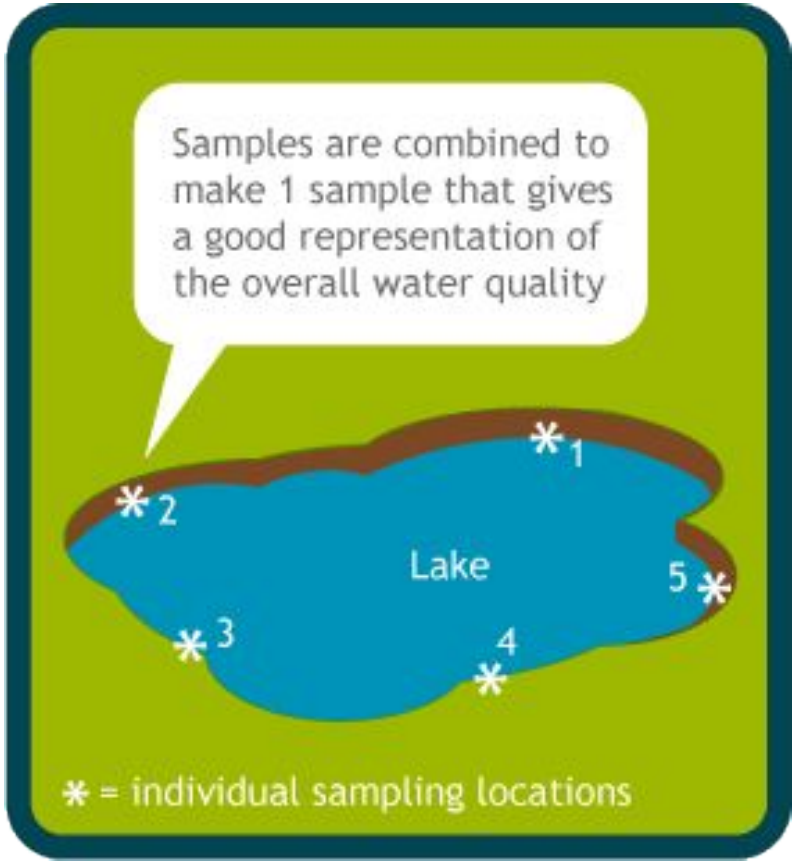
# Grab Samples

Grab samples are single samples collected at a specific spot at a site over a short period of time (typically seconds or minutes).

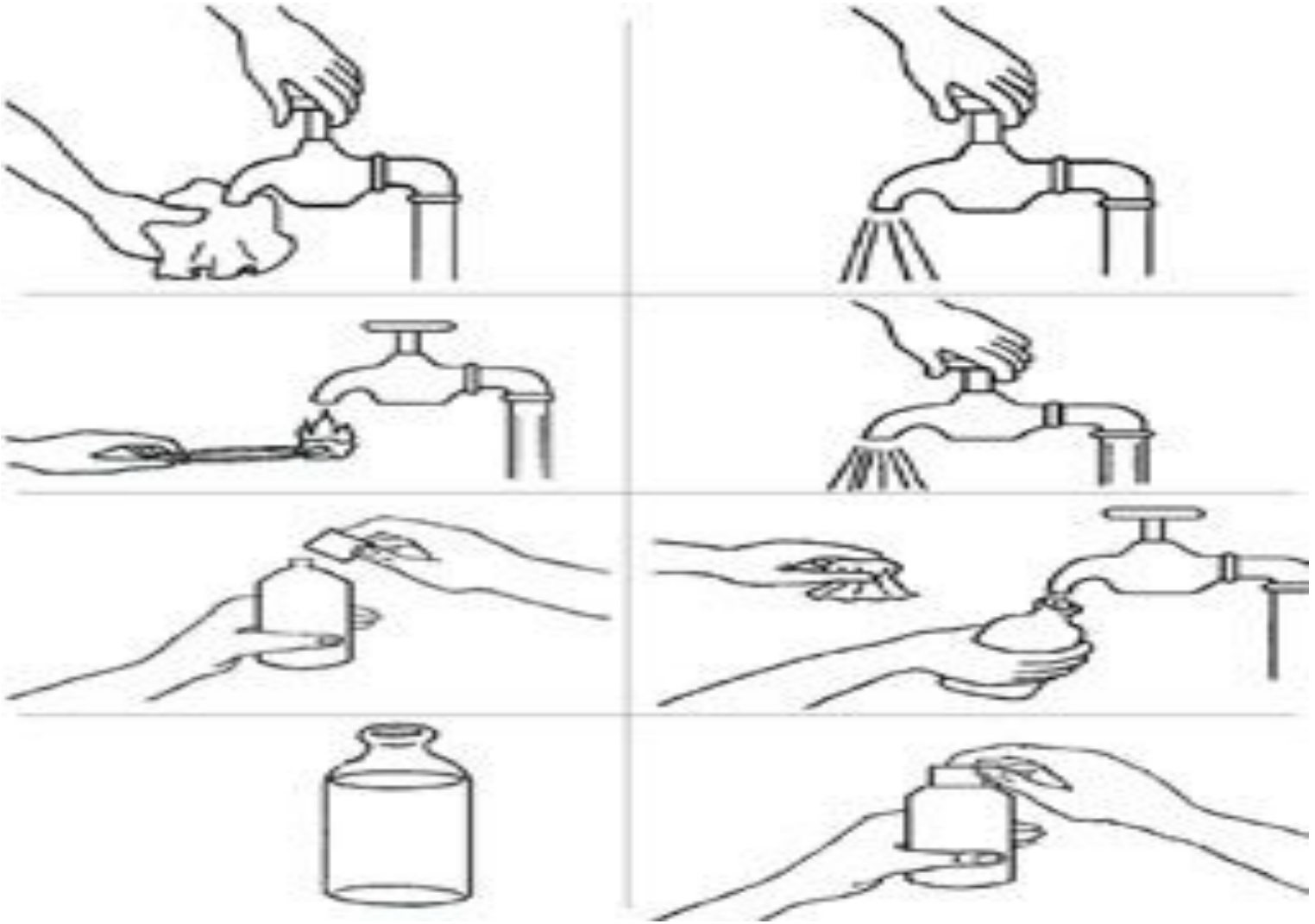


# Composite Samples

Provides a more representative sampling of heterogeneous matrices in which the concentration of the analytes of interest may vary over short periods of time and/or space.



# Ground Water/Tap Water Sampling



# Sample Container

Collect samples in a glass or plastic bottles that have been cleansed and rinsed carefully, given a final rinse with deionized or distilled water, and sterilized.

Volume of the sample should be 100 ml or more.









# Report Writing

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| Experiment No. | Name of Exp. | Date of Performance | Date of Submission | Rmks |
|---|---|---|---|---|
| | | | | |

- Top Sheet