Solutions to Hydrographic Surveying Problems

Civil Engineering Licensure Exam – Mock Exam (Day 12)

February 25, 2025

Solutions

1. **Problem:** Calculate the depth of water using an echo sounder with a given sound speed and time interval.

   Solution: How is the seabed 'mapped' using echo sounders?

2. **Problem:** Determine the contour interval on a topographic map given the elevation difference and number of contour lines.

   Solution: Determine Contour Interval and Contour Line Values

3. **Problem:** Explain the process of creating bathymetric profiles from echo sounder data.

   Solution: Hydrographic Survey Basics: Producing Bathymetric Profiles from Echo Sounder Data

4. **Problem:** Calculate the distance to the seabed using a single-beam echo sounder with a known sound speed and time delay.

   Solution: How is the seabed 'mapped' using echo sounders?

5. **Problem:** Determine the contour interval of a topographic map when given specific elevation data.

   Solution: Determine Contour Interval and Contour Line Values

6. **Problem:** Describe the method of processing echo sounder data to generate accurate depth measurements.

   Solution: Hydrographic Survey Basics: Producing Bathymetric Profiles from Echo Sounder Data

7. **Problem:** Compute the water depth using an echo sounder, given the time interval for the sound wave to return and the speed of sound in water.

   Solution: How is the seabed 'mapped' using echo sounders?

8. **Problem:** Find the contour interval on a topographic map using the difference in elevation between index contours and the number of intermediate contours.

   Solution: Determine Contour Interval and Contour Line Values

9. **Problem:** Explain how to interpret echo sounder readings to produce a bathymetric chart.

   Solution: Hydrographic Survey Basics: Producing Bathymetric Profiles from Echo Sounder Data

10. **Problem:** Calculate the depth of a water body using an echo sounder, given the time taken for the echo to return and the known speed of sound in water.

    Solution: How is the seabed 'mapped' using echo sounders?