Civil Engineering Licensure Exam – Mock Exam (Day 9: Distance and Angle Measurement)

February 24, 2025

Instructions

- Time Limit: 60 Minutes
- Coverage: Bearings, Azimuths, and Meridians
- Total Questions: 10 (Multiple Choice & Problem-Solving)
- Show complete solutions for problem-solving questions.

Section A: Multiple Choice Questions (MCQs)

Choose the best answer.

1. A bearing of $N45°E$ is equivalent to which azimuth angle?
   (a) 45°
   (b) 135°
   (c) 225°
   (d) 315°
2. The azimuth angle of $S60°E$ is:
   (a) 60°
   (b) 120°
   (c) 240°

(d) 300°

3. Convert an azimuth of 270° to a bearing.

   (a) $N90°W$
   (b) $S90°W$
   (c) $N270°W$
   (d) $S270°W$

4. A line has a back azimuth of 200°. What is its forward azimuth?

   (a) 20°
   (b) 160°
   (c) 180°
   (d) 340°

5. What is the sum of the interior angles in a closed traverse with 5 sides?

   (a) 360°
   (b) 450°
   (c) 540°
   (d) 720°

Section B: Problem-Solving

1. Compute the azimuth angle of a line with a bearing of $S35°W$.
2. Convert an azimuth of 210° into its corresponding bearing.
3. A survey line has an azimuth of 75°. Compute the back azimuth.
4. A closed traverse has 4 interior angles of $85°, 95°, 100°$, and 110°. Find the missing angle.
5. A line of known azimuth 125° is rotated clockwise by 40°. Determine the new azimuth.