1. A simply supported beam has a uniform load of 3 kips per foot for 10 feet from the right support. The beam is 25 feet long. Determine the reactions.
   1. 0, 30
   2. 6, 18
   3. 5, 15
   4. 12, 18
2. Which one of the following would have the greatest influence on the geometrics for a proposed right of way?
   1. A traffic count forecast for the design year of the highway.
   2. Current traffic counts for area highways in the immediate area.
   3. The number of highways intersecting the alternate route of the proposed highway.
   4. The opinions expressed at the public hearing concerning land acquisition.
3. An Interstate Highway System is built and maintained in which of the following ways?
   1. Built and maintained solely by the federal government.
   2. Built by the federal government and maintained by the state.
   3. Built by the state with federal funds and maintained by the state.
   4. Built and maintained by the state with federal funds.
4. The following steps are not in the proper order; they are general layout and construction steps for a sewer lines. Put steps in proper order.
   * + 1. Stretch cord
       2. Run levels along the trench
       3. Layout elevations at center line
       4. Measure offset from base line
       5. Lay pipe, form joints and backfill
       6. Fix cleat boards at 25’ 0” intervals
       7. Transfer line and grade
       8. Excavate trench

Which of the following is in the proper order?

1. 3, 4, 2, 7, 8, 1, 6, 5
2. 4, 3, 2, 8, 1, 7, 6, 5
3. 4, 3, 8, 6, 2, 2, 7, 5
4. 4, 2, 3, 8, 1, 6, 7, 5
5. On the highway curve designed for 50 mph speed, the super elevation should be sufficient
   1. To avoid centrifugal force
   2. To drive with 50 mph speed without considering the friction between tires and pavement
   3. To drive along the curve at 50 mph speed and safely pass through the curve
   4. To drive along the curve faster than 50 mph
6. For commercial and residential driveways, the percent grade for the portion within the states right of way should be within which of the following?
   1. 2 to 5
   2. 6 to 12
   3. 13 to 18
   4. 20 to 24
7. Which one of the following best describes how shrinkage cracks in asphalt concrete pavement would look?
   1. They are interconnected cracks forming large blocks with sharp corners or angles.
   2. They are usually transverse to the centerline of the pavement
   3. They are located near the joints in the underlying pavement
   4. They are crescent shaped cracks formed in the direction of the thrust of the wheels
8. You oversee a job where a plastic clay is being used. You must decide, without the use of lab equipment, of the suitability of a plastic clay material to be used in a properly compacted embankment. Which one of the following field tests would be most useful in deciding?
   1. Form a pat of soil in your hands. If no free water appears hen it is dry enough to use.
   2. Mold a cast of soil between your hands. If it sticks together without falling apart, then it is suitable for use.
   3. Roll a thread of soil between your hands. If it begins to crack and break up when the thread is 1/8” in diameter, then soil can be used.
   4. Study the color of the clay. If it is dry enough so that the color changes from grey to brown, then the soil can be used.
9. Which one of the following is the proper procedure for the construction of profile gradients of drainage and adjacent pavement on a relatedly flat surface?
   1. Profile gradient of drainage is steeper than the profile gradient of the pavement.
   2. Profile gradient of drainage is flatter than the profile gradient of the pavement.
   3. Profile gradient of drainage is the same as the drainage gradient of the pavement
   4. Profile gradient of drainage is independent of the profile gradient of the road.

1. B

2. A

3. C

4. C

5. C

6. B

7. A

8. C

9. A