1. When a 22’ pavement is banked ½” per foot because of the horizontal curve it means that?
   1. That the outer edge of the pavement is 11” higher than the inner edge
   2. The inner edge of pavement is 11” higher than the outer edge
   3. The center of the pavement is crowned 11” above edges
   4. The pavement is 11” thicker at one edge than the other
2. In superelevation section, where does the elimination of the crown begin?
   1. At the beginning of the horizontal curve
   2. At the termination of the superelevation
   3. At the beginning of the transition from the crowned section to the superelevation
3. Where the pavement must be superelevated, the edges of it should not change their normal grade more than what percent?
   1. 0.50%
   2. 1.00%
   3. 1.50%
   4. 2.00%
4. The theoretical maximum amount of superelevation on a concrete road is governed by which one of the following set of factors?
   1. The assumed maximum velocity of the traveling cars
   2. The radius of the curve
   3. Velocity of vehicles and the radius of the curve
   4. The assumed maximum velocity of traveling vehicles, the radius of the curve, and the friction between the pavement and the tires of the traveling vehicles
5. The maximum superelevation in New York is based on which of the following?
   1. Importance of preventing fast moving vehicles from leaving the highway when going around the curve
   2. Legal speed of the highway
   3. Design speed of the highway
   4. Need to permit slow moving vehicles to round the curve in any weather
6. When the radius “R” is expressed in feet and the velocity of the cars “V” is expressed in MPH, the formula for the superelevation on a curve becomes?
   1. E-f=(0.67V^2)/R
   2. e/f=(0.067V^2)/R
   3. e/f=V^2/(0.6R)
   4. e/f=(0.067R^2)/V
7. On a highway, whose designed speed is 50 mph, the superelevation on all curves should be sufficient to?
8. In the formula C/f=(0.067V^2)/R the letter “e” represents?
   1. Rate of superelevation in in/ft.
   2. Rate of superelevation in ft./ft.
   3. Total amount of superelevation in inches
   4. Total superelevation in ft.
9. The letter “f” in the formula in Question 8 represents?
   1. Design friction coefficient between tires and pavement
   2. Factor base3d on type of pavement and gradient
   3. Factor based on speed of the vehicle, driver’s reaction time and braking distance
   4. Factor based on the reactive forces working on the pavement, type of pavement, rate of deceleration
10. A horizontal curve has a radius of 1800’. The banking of the curve per foot width of pavement is?
    1. 1/8” per foot width of pavement
    2. ¼” per foot width of pavement
    3. ½” per foot width of pavement
    4. 1/3” per foot width of pavement
11. An accident is caused by the vehicle sliding and leaving the curve. Radius of the curve is 1520’. The curve is banked 0.20’ across the entire 20’ width of the pavement. Coefficient of friction between the tries and the pavement is 0.20. What was the velocity of the vehicle?
    1. 73 mph
    2. 59 mph
    3. 69 mph
    4. 80 mph
12. An auto goes down a 5% grade at 50 mph. Brake reaction time is one second.

Coefficient of friction between the tires of the car and the pavement is 0.50. The distance traveled by the vehicle from the point where the barricade was first seen to the point where the car came to a complete rest is?

* 1. 500’
  2. 264’
  3. 258’
  4. 185.2’

Superelevation Answers

1. A

2. C

3. B

4. D

5. D

6. B

7. Allow all vehicles, not traveling faster than 50 mph to go around the curve safely. To eliminate centrifugal forces.

8. B

9. A

10. A Assuming f=0.16, speed=60mph, c=0.058

11. C V=(e/f) R / 0.068

12. C Stopping distance of gradient

D=V^2 / (30(f-p)) V – Velocity

f – Coefficient of friction

p – Grade expressed as a ratio

D=50^2 / (30(.50-5/100)=185.2

Plus, you must add the distance traveled between the time barricade was seen (perception time) and the time applying the brakes

185.2+5280 x 50/3600= 258.2’