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Continuing Education Course #133
Roundabout Geometric Design

1. The “modern roundabout” was a _____ response to rotary intersections.
 - ☐ a. Canadian
 - ☐ b. British
 - ☐ c. Dutch
 - ☐ d. U.S.
2. The FHWA General Design Process is the standard design template for roundabouts.
 - ☐ a. True
 - ☐ b. False
3. Maximum entering design speeds of _____ mph are recommended for single-lane roundabouts.
 - ☐ a. 20 to 25
 - ☐ b. 15 to 20
 - ☐ c. 25 to 30
 - ☐ d. 30 to 35
4. What is the largest design vehicle for roundabouts on urban collectors and arterials?
 - ☐ a. City Transit Bus (CITY-BUS)
 - ☐ b. Fire Truck (FT)
 - ☐ c. Interstate Semitrailer (WB-65)
 - ☐ d. Interstate Semitrailer (WB-50)
5. The location of a pedestrian crossing is recommended to be a minimum setback of _____ feet from the edge of the circulatory roadway.
 - ☐ a. 20
 - ☐ b. 25
 - ☐ c. 15
 - ☐ d. 30
6. _____ have been proved to be the most vulnerable users of roundabouts.
 - ☐ a. Pedestrians
 - ☐ b. Motorcyclists
 - ☐ c. Disabled or impaired persons
 - ☐ d. Bicyclists
7. For a design speed of 45 mph, what is the calculated stopping sight distance ?
 - ☐ a. 300.6 ft
 - ☐ b. 425 ft
 - ☐ c. 359.8 ft
 - ☐ d. 360 ft

8. All of the following design decisions are used to produce the optimal roundabout design, except:
- ☐ a. size
 - ☐ b. position
 - ☐ c. central island
 - ☐ d. approach leg alignments
9. For a multilane roundabout (2 lanes) and a WB-67 design vehicle, what is the common inscribed circle diameter range?
- ☐ a. 150 to 220 ft
 - ☐ b. 165 to 220 ft
 - ☐ c. 200 to 240 ft
 - ☐ d. 130 to 180 ft
10. All of the following are trade-offs for an alignment through the center of a roundabout except:
- ☐ a. May create greater impacts to the left side of the roadway.
 - ☐ b. Increased exit radius reduces control of exit speeds through crosswalks.
 - ☐ c. May require a slightly larger inscribed circle.
11. The preferable angle for approaching roadways to a roundabout is _____
- ☐ a. Greater than 90°
 - ☐ b. Perpendicular
 - ☐ c. Less than 90°
12. The size of a single-lane roundabout is dependent on all of the following factors except:
- ☐ a. Design vehicle
 - ☐ b. Splitter island
 - ☐ c. Available right-of-way
13. The total length of a raised splitter island should be a minimum of _____ feet.
- ☐ a. 50
 - ☐ b. 100
 - ☐ c. 150
 - ☐ d. 75
14. How does roundabout entry width affect entry capacity?
- ☐ a. Entry width decreases as entry capacity increases
 - ☐ b. Entry capacity increases as entry width increases
 - ☐ c. Entry width increases as entry capacity decreases
 - ☐ d. Entry capacity decreases as entry width increases
15. The width circulatory roadway should be:
- ☐ a. 2 to 3 times the maximum entry width
 - ☐ b. Equal to the exit approach
 - ☐ c. Larger than the entry approach
 - ☐ d. 1 to 1.2 times the maximum entry width
16. The goal in selecting an entry curb radius is to provide visibility for the central island.
- ☐ a. True
 - ☐ b. False
17. The design vehicle is the controlling factor for the following considerations, except:

- ☐ a. Entry width
- ☐ b. Inscribed circle diameter
- ☐ c. Length of approaches
- ☐ d. Entry radii

18. The maximum inscribed circle diameter for a mini-roundabout is

- ☐ a. 100 feet
- ☐ b. 90 feet
- ☐ c. 120 feet
- ☐ d. 80 feet

19. All of the following are types of splitter islands for mini-roundabouts except:

- ☐ a. raised (non-traversable)
- ☐ b. non-mountable (non-traversable)
- ☐ c. mountable (traversable)
- ☐ d. flush (painted)

20. The _____ path is the flattest and most efficient traverse of a roundabout.

- ☐ a. fastest
- ☐ b. critical
- ☐ c. performance
- ☐ d. entry

21. _____ is the minimum radius on the fastest path around the central island.

- ☐ a. R1 (entry path radius)
- ☐ b. R4 (left-turn path radius)
- ☐ c. R3 (exit path radius)
- ☐ d. R2 (circulating path radius)

22. The maximum speed differential between conflicting traffic movements should be

- ☐ a. between 15 and 20 mph
- ☐ b. a minimum of 20 mph
- ☐ c. less than 10 to 15 mph
- ☐ d. less than 15 to 20 mph

23. The computed stopping sight distance for 25 mph is

- ☐ a. 112.4 feet
- ☐ b. 46.2 feet
- ☐ c. 197.8 feet
- ☐ d. 152.7 feet

24. AASHTO recommends measuring intersection sight distance using an assumed height of driver's eye of _____.

- ☐ a. 3.5 feet
- ☐ b. 3.0 feet
- ☐ c. 2.5 feet
- ☐ d. 2.8 feet

25. The intersection angle at roundabouts is measured between the vehicular alignment at the exit and the sight line required.

- ☐ a. True
- ☐ b. False

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