

# Design and Operation of Work Zone Traffic Control

## Knowledge Evaluation

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### **Instructions:**

Please read each question carefully before selecting your answer. There is only one correct or best answer for each question. Circle the response, which best answers, the question. It is important that you complete all test items. Read all the words in each question & answer

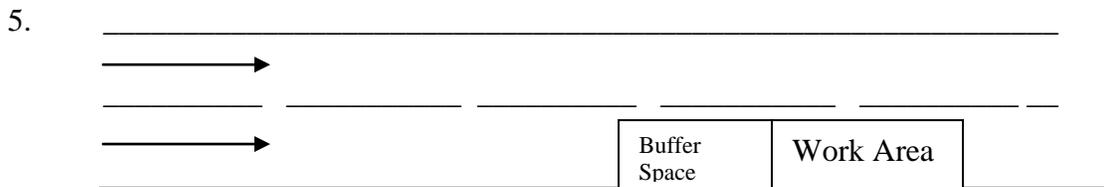
This is an **OPEN BOOK TEST!** You may use Part 1, 5 & 6 of the MUTCD or the supplementary manual provided for the class as informational sources. Each full question is worth 4 points.

The person named on this sheet shall complete tests independently. Tests not completed independently will not be considered for completion.

Please sign this page to confirm you have read and understand the instructions presented above.

Signature: \_\_\_\_\_

1. Pedestrian movement around and through a work site requires:
  - A. A visit by the TCS to all affected businesses and homes.
  - B. Posting copies of the TCP at both the upstream and downstream end of the work zone.
  - C. A separate safe footpath without abrupt changes in grade or terrain.
  - D. Publications of the MHT in a local newspaper.
  
2. Work Zone Traffic Control systems shall be designed with a focus on safety for:
  - A. General Contractor
  - B. Motoring Public, Workers and Pedestrians
  - C. Traffic Control Company
  - D. Department of Transportation
  
3. What type of barricade would normally be used for channelization; on expressways, freeways, and other high-speed roadways?
  - A. Type I
  - B. Type II
  - C. Type III
  - D. Temporary Traffic Barrier
  
4. What is maximum device spacing, in a merging taper, on a 65-MPH urban freeway?
  - A. 130 feet
  - B. 75 feet
  - C. 65 feet
  - D. 32 feet

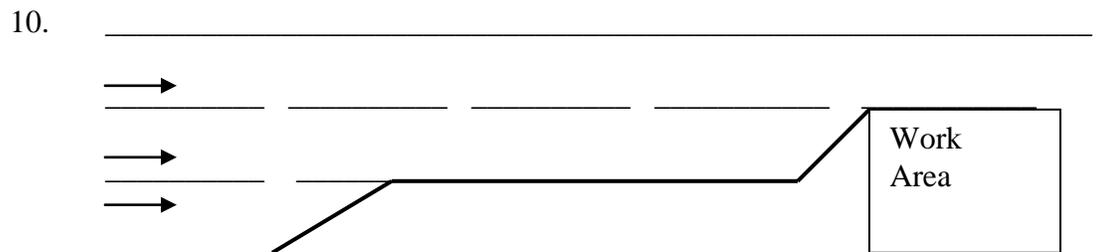


Given: High Speed Urban Highway  
 Speed = 45 mph  
 Work Area = 275 feet  
 Lane Width = 12 feet

Answer the following questions using the information presented above. Each question counts as one point.

- A. Minimum length of the Advance Warning Area shall be:
1. 600 feet
  2. 750 feet
  3. 1050 feet
  4. 5200 feet
- B. The Transition Area requires a minimum of \_\_\_\_\_ channelizing devices?
1. 11
  2. 12
  3. 13
  4. 15
- C. The Termination Taper can be installed with a minimum of \_\_\_\_\_ devices?
1. 10
  2. 6
  3. 5
  4. 3
- D. The Activity Area (buffer and work area) in the drawing shall be \_\_\_\_\_ long?
1. 600 feet
  2. 635 feet
  3. 275 feet
  4. 220 feet
6. Which statement is not correct when Portable Changeable Message Signs (PCMS) are used in a TTCZ? PCMS are used \_\_\_\_\_.
- A. To provide notice of ramp or lane closures
  - B. To replace required signing
  - C. Where adverse environmental conditions exist
  - D. When speed is expected to drop substantially
7. Delineation of intended safe path of travel on detours, diversions, transitions, and lane closures may be increased with the addition of \_\_\_\_\_.
- A. Type A low intensity lights
  - B. Type B high intensity lights
  - C. Type C low intensity lights
  - D. Sequencing arrow panels

8. Temporary traffic control areas should be carefully monitored to ensure \_\_\_\_\_.
- A. Traffic is maintaining the posted speed limit
  - B. Bicycles maintain adequate spacing from the construction workers
  - C. All devices used are clearly visible, clean, and in good repair
  - D. Flagging stations are adequately shaded
9. In the MUTCD, three words are used to describe the level of compliance. Which of these words is used when compliance is recommended, but not mandatory?
- A. Shall
  - B. Should
  - C. May



Given: Expressway/Freeway  
 Speed = 75 mph  
 Lane Width = 13 feet

Please refer to the above drawing when answering the following questions. Each question counts as one point.

- A. What recommended device would typically be found at the beginning of the merging tapers?
- 1. Type A Warning Lights
  - 2. Type C Warning Lights
  - 3. Sequential Arrow Displays
  - 4. Flood lights
- B. What is the minimum recommended length of the advance warning area?
- 1. 1500 feet
  - 2. 1600 feet
  - 3. 2600 feet
  - 4. 5140 feet

- C. What is the minimum recommended distance of the Transition Area?
1. 2600 feet
  2. 3900 feet
  3. 5200 feet
  4. None of the above
- D. This Transition Area requires a minimum of \_\_\_\_\_ channelizing devices?
1. 39
  2. 40
  3. 43
  4. 45
11. Sequencing Arrow Panels used on highways, streets, and roads shall be equipped with \_\_\_\_\_.
- A. Global Positioning Systems (GPS)
  - B. Automatic leveling devices with modulated laser functions
  - C. Retro reflective sonic strobe sensors
  - D. Automatic dimming devices
12. What is the length of a merging taper for a High Speed Urban Roadway with a posted speed of 55 mph and a measured lane width of 12 feet.
- A. 610 feet
  - B. 660 feet
  - C. 690 feet
  - D. 710 feet
13. What is the maximum length of a one-lane, two-way taper; Given a low speed urban street with a posted speed of 25 mph and a measured lane width of 14 feet?
- A. 150 feet
  - B. 125 feet
  - C. 100 feet
  - D. 50 feet
14. Which of the following is true of mobile operations?
- A. Devices such as flashing lights, and vehicle-mounted attenuators are not required.
  - B. Flaggers shall be used
  - C. The TCS shall drive the lead vehicle

- D. The advance warning area moves with the work area**
15. Flags and flashing lights on signs, sign illumination, and lights on channelizing devices:
- A. May not be used unless shown in the TA's described Part 6 of the MUTCD.
  - B. Should be used with caution since they are expensive
  - C. May confuse the motorist and shall never be considered.
  - D. May be added to the TA's as described in Part 6 of the MUTCD.**
16. What is the length of a merging taper for a low speed urban roadway; given a posted speed of 25 mph and a measured width of 13 feet?
- A. 325 feet
  - B. 225 feet
  - C. 135 feet**
  - D. 125 feet
17. Adding lighting to channelizing devices should be considered when:
- A. Devices are located on horizontal and vertical curves.
  - B. Adverse weather conditions are anticipated.
  - C. Headlights do not adequately illuminate retro-reflective material on devices in place.
  - D. All of the above**
18. When modifying the TTCZ, which of the following statements is correct?
- A. Modifications shall start at the downstream end of the project.
  - B. Advanced warning signs shall not be removed.
  - C. When changing the location of channelizing devices the new system should be operational prior to removing existing system.
  - D. All of the above**
19. All of the following are parts of a typical work zone, except?
- A. Advance Warning Area
  - B. Transition Area
  - C. Work Area
  - D. Travel Way**
20. Vehicle hazard warning lights can be used instead of a strobe light, when the vehicle carries an arrow panel?
- A. True
  - B. False**

21. To be effective, traffic control devices should meet five basic requirements:  
(Please list the five basic requirements.)

Fulfill a need.

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Command attention

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Convey a clear, simple meaning

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Command respect from the road users

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Give adequate time for proper response

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22. Permanent pavement markings can be painted over with black paint during construction activities?
- A. True  
B. False
23. Portion of the traffic control area that informs motorists that they should change their driving patterns is the:
- A. Termination Taper  
B. Transition Area  
C. Advanced Warning Area  
D. Buffer Area
24. If drums are placed in a roadway, you are required to have advanced warning signs?
- A. True  
B. False
25. Intermediate-term stationary work zones are areas where work will occupy a location for?
- A. More than 3 days  
B. Occupies a location for 1 hour  
C. More than one daylight period up to 3 days  
D. Nighttime work lasting more than 1 hour  
E. Both c & d  
F. Both d & a