Continuing Education Course #048
"Planning for Traffic Signals"
Test Worksheet

1. Accident data is typically summarized in the form of:
a. a condition diagram
b. an accident tabulation summary
c. a schematic diagram
d. a computer-based crash diagnostic chart
e. a collision diagram

2. A good day to conduct a turning movement count for use in the design of a traffic signal located at a school entrance would be:
a. a Sunday in December
b. a Tuesday in October
c. a Wednesday in July
d. a Saturday in April
e. a Friday in February

3. This method of speed data collection is least likely to cause drivers to slow down, producing more accurate results:
a. ATR (machine with road tubes)
b. radar
c. two lines and a stopwatch
d. car following
e. all of the above are equally good

4. TMC's and ATR's typically collect volume information:
a. via manual observers
b. using computerized counting boards
c. over a 24-hour period
d. at 15-minute intervals
e. all of the above

5. When is a traffic signal NOT typically placed into flashing operation?
a. when the conflict monitor detects a conflict
b. during periods when traffic volumes at the intersection become low
c. when an inductance loop becomes inoperative
d. before a new traffic signal is turned-on
e. before an unwarranted traffic signal is removed

6. Consider a major street with 2 approach lanes and a minor street with 1 approach lane where major street volumes exceed 900 for 10 hours on a weekday. The intersection meets a signal warrant if:
a. the minor street traffic volumes exceed 75 for these same 10 hours
b. the minor street traffic volumes exceed 75 for at least 8 of these same 10 hours
c. the minor street traffic volumes exceed 75 for at least 8 hours and delay exceeds 4 hours
d. the minor street traffic volumes exceed 75 for at least 8 hours
e. any of the above

7. For the previous problem, the 75 vehicles per hour on the side street applies to:
a. both side street approaches
b. both side street approaches, unless we are dealing with a "T" intersection
c. both side street approaches, unless there are left turn lanes
d. either side street approach
e. none of the above

8. All-red conflict flash should be used:
a. at non-actuated traffic signals
b. when requested by a local official
c. during special events, such as a parade
d. at the entrance to fire stations
e. at the intersection of two major streets

9. A right turn overlap phase should NOT be installed if:
a. the intersection is located in a commercial area
b. the traffic signal is fully actuated
c. the traffic signal controller can only accommodate eight phases
d. right turns on red are allowed
e. conflicting U-turns are permitted

10. When in doubt, a traffic signal should always be installed.
a. true, because any signal is a good signal
b. true, because signals always improve traffic flow and reduce delay
c. false, because signals are expensive to operate
d. false, because signals are prone to vandalism
e. false, because unwarranted signals can cause many problems

11. A thorough traffic engineering study should be conducted:
a. before designing and installing a traffic signal
b. using projected traffic volumes obtained from long range planning models
c. by experienced traffic signal technicians certified by IMSA
d. once the signal is in operation to verify its intended operation
e. if sufficient financial resources exist to fund the study

12. An intersection that meets a traffic signal warrant may no longer meet that warrant if:
a. the posted speed limit is increased on the minor street
b. multi-way stop control is installed
c. the percentage of trucks on the major street decreases
d. approach lanes are added to the intersection
e. none of the above

13. Which type of phasing is appropriate for locations where the potential for left turn accidents is high:
a. protected-only left turn phasing
b. permissive left turn phasing
c. protected/permissive left turn phasing
d. split phasing
e. all except b

14. If there are 7 right-angle injury accidents at an unsignalized intersection within one year then the accident warrant:
a. is met
b. is not met
c. may be met
d. is met, unless 3 or more accidents only had minor injuries
e. is met, unless side street traffic volumes are less than 100 vph

15. Which item is NOT typically provided on a condition diagram:
a. signal timings
b. lane width
c. lane configuration
d. crosswalk length
e. posted speed limits

16. At the intersection of Main and Elm there are 130 northbound left turn vehicles and 570 southbound thru vehicle during a typical weekday PM peak hour. Is a left turn phase warranted for the northbound left turn?
a. yes
b. no
c. only if a sight distance restriction exists
d. depends on the number of main street thru lanes
e. none of the above

17. If a traffic signal with pedestrian features is installed:
a. the crossing distance must be greater than 200 feet
b. school crossing guards are still of benefit at school crossings
c. LED indications must be used
d. pedestrian buttons are required by the MUTCD
e. the pedestrian indications must remain active when the signal is in flash

18. For what application is sufficient sight distance NOT an important consideration?
a. use of flashing operation
b. traffic signal installation
c. use of right turn overlap phasing
d. left turn phase selection
e. traffic signal removal

19. Selection of signal phasing that is too complex will result in unnecessary:
a. accidents
b. maintenance costs
c. vehicular delay
d. citizen complaints
e. all of the above

20. The major street approach volume is 1200 while the volume on the highest minor street approach is 200. Is the peak hour warrant met?
a. yes
b. no
c. maybe
d. yes, if the major street has 2 or more lanes
e. yes, if the minor street has 2 or more lanes