

Final term exam for the academic year 2012-2013

Question 1 (10 marks)

Explain briefly what is meant by:

1. Traffic impact study
2. Conflict points at intersections
3. Lane distribution
4. Class I and Class II in two way two lane streets
5. Directional segment for the two way two lane
6. Traffic control devices

Question 2 (20 marks)

Determine the required number of lanes for a freeway segment under the following conditions:

- level terrain
- ADT is 60000 v/day/both direction and PHF is 0.95, Directional distribution 60/40, k is 0.10
- design level of service is B, Design speed is 70 mph
- Shoulder width is 4 ft and median width is 4 ft
- 90% passenger cars, 5% trucks, 5% buses.
- Lane width is 11 ft
- Drivers is not familiar with the road

Question 3 (15 marks)

A segment of multilane highway in mountainous terrain has an access density of 2 accesses/mile in the southerly direction and 1.5 accesses /mile in the northerly direction. The segment of the multilane is divided and has the following features:

- four 10 ft wide lane
- Obstructions are 7 ft away from the travelled lane on the right direction and 4-ft wide median
- BFFS is 50 mile/hr

- Traffic volume is 3000 veh/hr/direction, 10% trucks, and 10% buses, PHF is 0.9
 - Driver is familiar with the road
- Determine the level of service for this segment

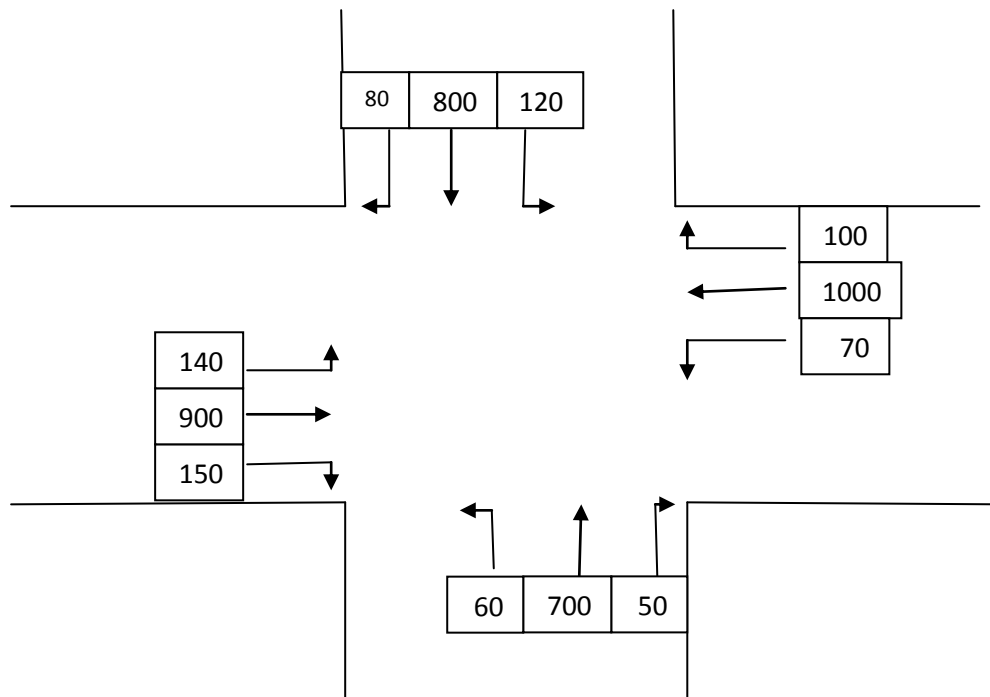
Question 4 (10 marks)

Determine the LOS for a two-lane highway segment in level terrain. Traffic volumes (two-way) are 4000 veh/h. Trucks: 5%, buses: 5%, PHF: 0.85, directional distribution: 50/50, and no-passing zones: 20%. Base free flow speed: 55 mi/h, lane width: 12 ft, shoulder width: 7 ft, and access points/mi: 12.

Question 5 (15 marks)

For the following intersection it is required to do the following:

- Draw the intersection into suitable scale showing all traffic control devices
- Determine the number of conflict points



Best wishes.....Dr Ibrahim Ramadan