

SHEET (2)
TRAFFIC VOLUME STUDIES

1. A speed study was conducted at a roadway section of length 100 m. The examined roadway has a free flow speed of 120 km/h. Crossing times (in sec) listed below were recorded for a sample of 30 vehicles.

4.3, 4.0, 4.1, 5.3, 5.1, 4.7, 3.8, 4.0, 4.0, 3.7, 4.7, 4.6, 5.2, 5.0, 4.1, 4.0, 5.0, 5.3, 3.9, 3.6, 4.0, 4.4, 4.0, 4.7, 4.5, 5.5, 3.7, 3.5, 4.1, 4.5

- a) Calculate the Time Mean Speed, and the Modal Speed (km/h) for this roadway section. Comment on your results from theoretical and practical perspectives.
- b) Calculate the Speed Index and the Planning Speed Index for this roadway section. Comment on your results.
2. Using the following traffic counts, determine the peak hourly traffic volume and peak hour factor (PHF).

Interval	Count
3:00 – 3:15 pm	520
3:15 – 3:30 pm	560
3:30 – 3:45 pm	670
3:45 – 4:00 pm	770
4:00 – 4:15 pm	720
4:15 – 4:30 pm	670
4:30 – 4:45 pm	590
4:45 – 5:00 pm	540

3. A rural Road "R1" has a traffic volume distribution of ADT through the year as shown below:

Month	<i>ADT</i>
January	4150
February	4580
March	3720
April	2600
May	1880
June	1620

Month	<i>ADT</i>
July	1390
August	1200
September	1440
October	1550
November	2070
December	2840

- a) Calculate monthly (seasonal) expansion factors.
- b) Another Road "R2" is considered similar to Road "R1" in term of traffic seasonal variations. Daily counts of 2200 vehicles were recorded during the month of April.
 - i- Estimate the AADT of Road "R2"
 - ii- Estimate the ADT on Road "R2" during month of August.