CEL - 241- Major part II

Max Marks 8 **(G.Tiwari)**

1. a. A Volume of 900 vph is observed at an intersection approach. Plot the peak rate of flow within the hour as PHF varies from 1.00 - 70 (1.00, .9, .8, .7).

   0.70

   b. A traffic stream displays average vehicle headway's of 2.2 sec at 30 kmph. Compute the density and rate of flow for the traffic streams.

   c.The following travel times were measured for vehicles as they traversed on 3.2 km segment of highway. Compute the time mean speed and the space mean speed in km/h. Why is space mean speed always lower than time mean speed.

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Vehicle	Travel Time (mins)
1	2.6
2	2.4
3	2.4
4	2.8
5	2.2
6	2.1

2. Consider the intersection layout and demand volumes shown in figure 1. Each lane is 3m wide. Saturation flow of through lane= 1800vphgpl,through and right turn lane=1600, through and left turn lane is 1700. Lost time per phase is 4sec. Suggest an optimal cycle length and phasing scheme for safe movement of vehicles and pedestrians(pedestrian walking speed is 1.2m/sec). Show all calculations.

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