Major Exam. CEL 434. Transp^{n} Safty and Env^{t} 2:30-5:30; 29.4.'08; IV 203
Explain in brief with figure, charts, graphs, flow-charts, equations etc.
All the notations have their usual meanings.
Max Marks: 30+5@15 = 105

1. What are the common air-pollutents we find in a super-metropolis? Discuss them along with their sources, approximate residence time, effect of atmospheric condition, and how these pollutants along with the weather conditions affect living entities and ecological balance.

2. For a street lighting source at height h the illumination on horizontal (E_H) and vertical (E_V) planes will be: $I \cos^3\theta / h^2$ and $I \sin\theta . \cos^2\theta / h^2$ respectively. Explain and deduce the relation. Draw a geometry to describe the luminaire concept of visibility in roa

3. What problems we face in cities where car-populations are high?

4. Deduce the relation: $C = \frac{E}{F}\left[1 - e^{-(F/V)t}\right]$

5. Describe the effects of elevating and depressing highways, and noise barriers on noise exposure of adjacent land uses.

6. Explain a) Passen^{r}-car fuel consumption (Miles per hour vs. volume of fuels per vehicle-mile)
b) Bus fuel consumption (Stops per mile vs. volume of fuels per bus-mile)