

Answer the test questions on the yellow paper provided. Express yourself clearly, legibly, and concisely!! Put your name on the first yellow sheet and your initials on each succeeding sheet you use.

1. **The Public Utility Holding Company Act of 1953.**
 - A. (10 points) What was its objective?
 - B. (10 points) What were its negative consequences?

2. **Federal transit aid.** (10 points) Explain the differences between the two programs listed below. What are their respective (dis)advantages, from the point of view of the local transit agencies and from the perspective of the Federal Transit Administration?
 - Section 5307 formula block grants
 - Section 5309 discretionary grants

3. **Transit data.** According to the National Transit Database for Year 2000, GLPTC of Lafayette had 65 vehicles, 1,221,400 Revenue VMT, 102,100 Revenue VHT, 2,787,900 passenger boardings, and 11,369,100 PMT.
 - A. (10 points) Calculate (if the NTD information permits) the average operating speed, average trip length, and average vehicle occupancy.
 - B. (10 points) Using the 2002 end-of-year PERFORMANCE INDICATORS for GLPTC on the sheet provided in CE560, determine (if you can) which (if any) of the values you calculated in Part A have increased since 2000.

4. **Demand Responsive Transit.**
 - A. (10 points) Under what conditions is DRT likely to be better than fixed route, fixed schedule transit?
 - B. (10 points) What aspects of DRT cause it to be so rare, except for transporting handicapped individuals?

5. **Route Design.** (10 points) Is the east end of CityBus Route 7 State Road 26 East (handout 12 February 2003) evidence of a balloon route? Why (not)?

6. **Frequency of Service.** A route serves 100 passengers per hour at an operating cost of \$45.00 per bus-hour.
 - A. (10 points) If the value of waiting time is \$20.00 per hour, what headway would you recommend the service provider maintain on the route, so as to minimize waiting + operating costs?
 - B. (10 points) If the route has a *round trip* length of 13.1 miles and the buses travel at 12 mph, how many vehicles will be needed to serve this route at the headway prescribed in Part A? How long will the layovers be per round trip?