國立嘉義大學九十五學年度

運輸與物流工程研究所碩士班招生考試(甲組)試題

科目：運輸工程

1. Please discuss the importance of transportation system to the activities/components within a supply chain system. (25%)

2. The airport terminal apron is an area for the parking or holding of aircraft. One of the primary factors to design the space requirements for an airport terminal apron is to determine the required number of aircraft gates. The number of gates required depends on the peak volume of aircraft to be served and how long each aircraft occupies a gate. One formula that has been proposed by Horonjeff for computing the required number of gates is:

$$n = \frac{vt}{u}$$

where

  $v =$ design hour volume for departures or arrivals, aircraft/hr

  $t =$ weighted mean gate occupancy, hr

  $u =$ utilization factor, suggested to be 0.6 to 0.8 where gates are shared

Please estimate the required number of aircraft gates based on the following information by using Horonjeff formula: (25%)

Number of arrivals in the peak hour	20 (aircraft/hr)
Average gate occupancy time	45 min (0.75 hr)
Utilization factor	0.6

3. Please describe the seven main elements of a railroad cross section. (25%)

4. Please describe the following terms: (25%)
    a. All-or-nothing traffic assignment
    b. Average daily traffic volume
    c. Peak hour factor
    d. ESAL (equivalent single-axle load)
    e. Breakwater