

系所組別：交通管理科學系甲組

考試科目：運輸學

考試日期：0306，節次：3

※ 考生請注意：本試題 可 不可 使用計算機

## 1. (20%) 名詞解釋

- (a) Seamless Transportation
- (b) Centralized Traffic Control
- (c) Copenhagen Accord
- (d) Third Party Logistics (3PL)
- (e) WiMax

2. (10%) 請說明航空事業之經營模式有那幾種？請比較其優缺點及其限制條件，並舉例說明。

3. (10%) 何謂航運之異業垂直整合(certical integration)與同業水平合作(horizontal cooperation)之策略聯盟？試分析兩者的差異與優缺點。

4. (10%) 運輸業之定價方法有那幾種？請舉例說明並比較其優缺點。

## 5. (15%) 大眾運輸系統監督與評鑑

- (a) 我國對大眾運輸系統之監督機構與其所管制之內容為何？
- (b) 大眾運輸系統應如何進行評鑑？其評鑑之內容應該考慮那些指標。

6. (15%) 臺灣高鐵的原預測運量為每日 23.1 萬人次，預測營收全年為 827 億元，2008 年實際營運為每日 8.5 萬人次，實際營收全年為 230 億元。

- (a) 請試說明預測與實際運量數字差異可能的原因為何？
- (b) 請提出未來推動公共建設 BOT 案的建議。

(背面仍有題目,請繼續作答)

系所組別： 交通管理科學系甲組

考試科目： 運輸學

考試日期：0306 · 節次：3

※ 考生請注意：本試題  可  不可 使用計算機

## 7. (20%) 公車專用道

A 12-kilometer expressway connects two urban areas. The supply function for each of the two lanes per direction of the link may be approximated by

$$t = 20 + q/200$$

where  $t$  is the travel time in minutes and  $q$  the flow per lane in passenger car units (PCU) per hour. The road is normally used by cars and express buses (non-stop) only; the corresponding vehicle travel times are  $t_c$  and  $t_b$ . The bus service has a peak-hour frequency of one bus per minute. The demand function for car travel has been estimated to be:

$$V_c = 3480 - 60 t_c$$

Where  $V_c$  is the total car flow per hour and direction. In a similar way, the demand function for bus trips is:

$$V_b = 4200 - 75 t_b$$

Where  $V_b$  is the number of passengers per hour and direction. You may assume that both  $t_c$  and  $t_b$  can be calculated from the above supply functions and that a bus is equivalent to 2 PCUs.

- What is the initial equilibrium state? If a bus has 60 seats, what is their load factor (occupancy divided by capacity)?
- One of the lanes is now taken for exclusive use by buses. What is the new equilibrium state and the new load factor for buses?