

國立高雄第一科技大學 101 學年度 碩士班 招生考試 試題紙

系所別：運籌管理系

組別：運輸管理組

考科代碼：2316

考科：運輸概論

注意事項：

- 1、本科目得使用本校提供之電子計算器。
- 2、請於答案卷上規定之範圍作答，違者該題不予計分。

1. Please compute the Peak Hour Factor (PHF) for the next two conditions.
 - (a) (15%) Assume that 50 vehicles were counted during each of all possible 5-min intervals during the peak hour.
 - (b) (15%) Consider the extreme case where 250 vehicles were counted during a 15-min interval and no vehicles were observed during the rest of the hour.
2. (20%) Traffic congestion has become a serious issue in a contemporary urban area. Please describe what are the effects of traffic congestion.
3. (15%) Please describe the definition of Intelligent Transportation System (ITS). In addition, please instance two ITS services and explain how they work.
4. (20%) 巨觀車流特性的三個基本參數為速度(speed)、流量(flow)、密度(density)。
 - (a) 假設 u 表速度、 k 表密度、 q 表流量，請以數學方程式描述三個參數的關係。
 - (b) 請以圖形說明三個參數兩兩間的關係，即「速度—密度」關係、「速度—流量」關係、「流量—密度」關係。
 - (c) 請於上述圖形中標示：自由車流速率(free flow speed)、擁擠密度(jam density)、最大流量(maximum flow)、最佳密度(optimum density)。
5. (15%)請說明運輸配送在整個供應鏈管理中所扮演的重要作用及角色。