

所有題目均可以用中文或英文作答。

1. (15 分) Consider a highway segment. One single Clothoid of parameter 1500 connects two curves of radius 1200M and 1800M. Please calculate the length of the Clothoid curve.
2. (20 分) In the airline industry, operating costs per customer served are often higher for smaller companies, compared with those of larger companies. Please briefly explain the reason.
3. (15 分) A vehicle is traveling on a straight highway at 90KPH. The tire-pavement friction coefficient is 0.72. The grade is 2% downgrade. Please calculate the stopping distance for the vehicle. Does this stopping distance depend on the brakes?
4. (20 分) 以鋪面工程而言，若盲目應用國外道路試驗成果於台灣地區之鋪面，你認為可能產生那些問題？該如何解決？
5. (15 分) 壓實能量對路基土壤之最佳含水量之決定及瀝青混凝土配合設計之最佳瀝青含量之決定有很大的影響，請說明壓實能量大小對這兩種試驗結果之影響。並說明壓實能量大小在這兩種試驗中所代表的實際意義。
6. (15 分) 請說明下列各項試驗並簡述其於瀝青規範中之功能：針入度試驗，閃火點試驗，薄膜烘箱試驗。