編號： 156

國立成功大學 104 學年度碩士班招生考試試題

系所組別：測量及空間資訊學系

考試科目：科技英文

考試日期：0211，節次：1

※ 考生請注意：本試題不可使用計算機。 請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

一、 英翻中（把握文意，無須逐字翻譯; 括號裡面文字無需翻譯）

1. Knowing the distribution of human population is critical for those focused on population health, food security, climate change, conflicts, and natural disasters. This study demonstrates how data collected by mobile phone network operators can cost-effectively provide accurate and detailed maps of population distribution over national scales and any time period. The methods may be applied to estimate human population densities in low-income countries where data on population distributions may be scarce, outdated, and unreliable. (adapted from PNAS vol.111, 15888-93 by Deville, et al.) (15 分)

2. Surveying has to do with the determination of the relative spatial location of points on or near the surface of the earth. It is the art of measuring horizontal and vertical distances between objects, of measuring angles between lines, of determining the direction of lines, and of establishing points by predetermined angular and linear measurements. Along with the actual survey measurements are mathematical calculations. Distances, angles, directions, locations, elevations, areas, and volumes are thus determined from the data of the survey. (Basic Surveying—Theory and Practice, Oregon Department of Transportation) (15 分)

3. From flat Earth, to round Earth, to a rough and oblate Earth, people's understanding of the shape of our planet and its landscapes has changed dramatically over the course of history. These advances in geodesy—the study of Earth's size, shape, orientation, and gravitational field, and the variations of these quantities over time—developed because of humans' curiosity about the Earth and because of geodesy's application to navigation, surveying, and mapping, all of which were very practical areas that benefited society. (EOS, vol.90, 153-64, by Wdowinski and Eriksson) (20 分)

二、 中翻英 （把握文意，無須逐字翻譯; 括號裡面文字無需翻譯）

1. 測量學理論與實習課程對不同領域的工程教育都有助益，其知識可訓練工程師的邏輯思考能力，以及提升團隊合作和謹慎處理數據之習慣。(15 分)

2. 地理資訊系統與全球定位系統、遙感系統合稱 3S 系統，是用於輸入、儲存、查詢、分析和顯示地理數據的計算機系統，已經廣泛地應用在不同的領域。(15 分)

3. 航空攝影是一個最古老和最廣泛被使用的遙感探測方法，將相機安裝在飛行高度 200 到 15,000 公尺的輕型飛機上來收集大量航空照片，航空照片提供地球表面的即時視覺資訊，可用來製作詳細的地圖。航照圖通常由商業航空攝影公司利用改裝飛機所拍攝。(20 分)