

國立陽明交通大學 110 學年度第 2 學期
博士班資格考筆試考試試題

土木工程學系 測量組

科目：攝影測量及遙感探測學

選考學生數：2

考試時間：120min

共 頁，第 頁

1. Please answer the following questions (15%)
 - a) draw the epipolar geometry of stereo images and mark the epipolar lines and epipolar plane.
 - b) tell the benefit of epipolar lines in image point matching.
 - c) which direction of parallax should be eliminated to have a stereo vision?
2. Please explain the effects of the B/H ratio on the space intersection of aerial photogrammetry regarding height accuracy. Also, please explain why a small B/H ratio is usually used for mapping in city areas? (10%)
3. Please elaborate on the differences between supervised, unsupervised, and object-based image classification techniques? (15%)
4. Please tell the parameters and their physical meanings of the interior, exterior, relative, and absolute orientations? (10%)
5. Please explain why a stereo model acquired by only using the coplanarity equation cannot provide a real scale of measurement? (10%)
6. What are radiometric and geometric corrections for satellite images? Please design a procedure to perform radiometric and geometric corrections for Formosat-2 satellite images. (10%)
7. What are the active and passive sensors in remote sensing? Briefly explain the basic principle, advantages, disadvantages, applications, and challenges. (20%)
8. Please draw the spectral response curves (reflectances) of clear water body, green vegetation, and dry bare soil from visible to infrared bands. Please use this figure to explain the idea of normalized vegetation index (NDVI). (10%)