DEPARTMENT OF CIVIL ENGINEERING
COLLEGE OF ENGINEERING
ANNA UNIVERSITY, CHENNAI – 600 025

END SEMESTER EXAMINATION MAY 2013
SIXTH SEMESTER GEOINFORMATICS (R 2008)
GI 9354 – PHOTOGRAMMETRY II

Time : 3.00 hrs   Max. Marks : 100

Instructions: 1. Answer all questions under PART–A and PART-B respectively
2. Assume suitable data wherever necessary
3. Draw neat sketches wherever required

PART – A   10 x 2 = 20 Marks

1. What are the advantages of analytical stereo plotter?

2. Define interior orientation.

3. What are the viewing systems employed in stereo plotter?

4. Differentiate between ortho photo and aerial photo?

5. Discuss control requirement for the analog aero triangulation.

6. What is an universal plotter?

7. How to determine horizontal and vertical angle from a terrestrial photo using graphical method?

8. List the use of x ray photogrammetry.

9. Differentiate between analytical and digital photogrammetry.

10. What are the different sources of digital images?

PART – B   5 x 16 = 80 Marks

11. a. i. Explain in detail about online ortho photo production?   8

    ii. Explain about Zeiss parallelogram?   4

    iii. What are the advantages of offline ortho photo production?   4

12. a. i. Explain in detail about leveling the model in a stereo plotter? **12**

ii. Discuss working principle of analytical stereo plotter. **4**

(or)

b. i. After relative orientation, the base components are b_x=225mm; **12** b_y=-8.16mm; b_z=6.76mm. The data for two control points are as follows.

Point	Ground	Ground	Ground Z	Model x	Model y	Model z
	X (m)	Y (m)	(m)	(mm)	(mm)	(mm)
1	296.3	343.7	1243.66	302.55	716.25	144.66
2	766.9	347.2	1275.24	325.70	318.02	172.22

The map scale is 1/1500. Compute the base components necessary to bring the model to map scale.

ii. Outline the steps of single projector method of relative orientation. **4**

13. a. i. Explain detail about semi analytical aero triangulation. **11**

ii. Describe graphical method of adjusting strips of stereo triangulation. **5**

(or)

b. i. Derive and explain about three dimensional conformal co-ordinate **16** transformations.

14. a. i. A horizontal terrestrial photo was exposed with a stereometric **16** camera having a fixed base of 120cm and a focal length of 64mm. Images of object point A have photo coordinates x_a=32.41mm and y_a=23.74mm on the left photo and x_a'=28.06mm and y_a'=23.73mm on the right photo. Derive the equations and calculate the X, Y and Z coordinates of point A. The camera was at an elevation of 271.8m when the exposure was made.

(or)

b. i. Derive the equation to find horizontal and vertical angle using **8** terrestrial photo?

ii. A terrestrial photo was exposed with a photo theodolite having a focal **8** length of 65mm. Find the horizontal angle ALB at the exposure station subtended by a points A and B if corresponding images a and b have photo co-ordinates of x_a=33.29mm, y_a=-16.78mm, x_b=-21.42mm and y_b=27.73mm. Also calculate the vertical angles for point A and B.

15. a. i. Explain about automatic measurement of fiducial marks. **12**

ii. What are the advantage of digital photogrammetry? **4**

(or)

b. i. Explain about configuration and requirement of peripheral devices for **8** digital photogrammetic work station.

ii. Write short notes on creation of digital images. **8**