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**B.E (FULL TIME) DEGREE END SEMESTER EXAMINATION
NOVEMBER 2011**

17

**CIVIL ENGINEERING BRANCH
Third Semester Geoinformatics (Regulation 2008)**

GI 9203 Photogrammetry-I

Time : 3.00 hrs

Max. Mark : 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 is Diapositive?
2. Define the terms a) Stereopair b) Exposure station.
3. What is image compensation motion?
4. What is Angular field of view?
5. Define Parallax angle.
6. Derive scale of the vertical photograph.
7. List the methods for establishing ground control survey.
8. Differentiate between pre-control and post-control.
9. List the equipments used for photo interpretation.
10. Differentiate image texture from image pattern.

PART – B

5 x 16 = 80 Marks

11. a. i. What are the factors to be considered for flight planning? 6
- ii. A rectangular area 20 km in the North-South direction by 15 km East West direction is to be covered with aerial photography having a scale at 1:5,000. End lap and side lap are 60% and 20% respectively. A camera having a 23cm square format is to be used. Compute the total number of photographs in the project, assuming that flight line Parallel with east and west project boundaries. 10

12. a. i. What are the applications of the Photogrammetry? **4**
 ii. Explain in detail about lens aberration. **12**
- (or)**
- b. i. Write short note on Scheimpflug condition. **4**
 ii. Explain the procedure for processing of B/W film. **8**
 iii. Discuss about end lap and side lap. **4**
13. a. i. Write short note on mosaics. **4**
 ii. Explain in detail about various corrections applied to the measured photo co-ordinates. **12**
- (or)**
- b. i. Explain in detail about multi collimator method of camera calibration. **16**
14. a. i. Derive an equation for relief displacement. **6**
 ii. A vertical aerial photograph was taken with a camera having a focal length of 152.3-mm. Ground points A and B have elevations 430m and 450 m above sea level respectively, and the horizontal length of a line AB is 590 m. The images of A and B appear at a and b and their measured photo co-ordinates are $x_a=18.21\text{mm}$, $y_a=61.32\text{mm}$, $x_b=109.65\text{mm}$ and $y_b=-21.209\text{mm}$. Calculate the flying height of the photograph above sea level. **10**
- (or)**
- b. i. Derive an equation for auxiliary image co-ordinates and ground co-ordinates for a tilted photo with neat sketch. **16**
15. a. i. Derive parallax equation and parallax bar constant. **16**
- (or)**
- b. i. Discuss the various basic elements of interpretation of aerial images with examples. **16**

Pavement Design Catalogue
Recommended design for Traffic Range 1-10msa
CBR 9 & 10 %

Cumulative Traffic (msa)	Total Pavement Thickness (mm)	Pavement Composition			
		<i>Bituminous Surfacing</i>		Granular Base(mm)	Granular sub base (mm)
		Wearing Course (mm)	Binder Course (mm)		
1	375	20PC		225	150
2	425	20PC	50BM	225	150
3	450	20PC	50BM	250	150
5	475	25SDBC	50DBM	250	150
10	540	40BC	50DBM	250	200

Pavement Design Catalogue
Recommended design for Traffic Range 10-150 msa
CBR 10%

Cumulative Traffic (msa)	Total Pavement Thickness (mm)	Pavement Composition		
		<i>Bituminous Surfacing</i>		Granular Base and Sub Base (mm)
		BC (mm)	DBM (mm)	
10	540	40	50	Base = 250
20	565	40	75	
30	580	40	90	
50	600	40	110	Sub-base = 200
100	630	50	130	
150	650	50	150	