

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: MSc
BRANCH: GEOINFORMATICS**

**SEMESTER : III
SESSION : MO/2025**

SUBJECT: GI603 AERIAL, SATELLITE, UAV BASED PHOTOGRAMMETRY & APPLICATION

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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Q.1(a)	State any two historical landmarks in the field of Photogrammetry.	[2]	1 1
Q.1(b)	Explain with examples any two elements of Image Interpretation.	[3]	1 2
Q.1(c)	State the differences between Flight Planning over Himalayan terrain and the Indo Gangetic plains in the winter months.	[5]	4 3
Q.2(a)	In aerial photographs, what causes image displacements?	[2]	4 3
Q.2(b)	How is differential parallax different from absolute parallax? Give the mathematical expression for both.	[3]	2 4
Q.2(c)	Derive an expression for angle of coverage of an aerial photograph. Give a classification of aerial photographs based on angle of coverage.	[5]	2 5
Q.3(a)	Describe interior orientation and exterior orientation in photogrammetry.	[2]	1 2
Q.3(b)	What is Epi-polar Geometry? Explain.	[3]	2 2
Q.3(c)	Write a note on aerotriangulation.	[5]	4 1
Q.4(a)	Why is Ortho-rectification of stereopairs necessary? How can it be done digitally over a workstations ? Explain	[5]	3 3
Q.4(b)	Give the advantages and disadvantages of digital verses analogue photogrammetric processes.	[5]	3 4
Q.5(a)	There exists a difference in flight planning for UAVs and conventional aerial photographs. Justify.	[5]	4 4
Q.5(b)	You are to construct a 3Dmodel of an object using open source 3D photogrammetry software. Which software would you use? Give the advantages and disadvantages of the software.	[5]	2 6

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