

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI			
(END SEMESTER EXAMINATION)			
CLASS:	M.Sc		SEMESTER : II
BRANCH:	Geoinformatics		SESSION : SP/22
SUBJECT: GI509 DIGITAL SATELLITE IMAGE PROCESSING			
TIME:	2 Hrs		FULL MARKS: 50
INSTRUCTIONS:			
<p>1. The question paper contains 5 questions each of 10 marks and total 50 marks.</p> <p>2. Attempt all questions.</p> <p>3. The missing data, if any, may be assumed suitably.</p> <p>4. Before attempting the question paper, be sure that you have got the correct question paper.</p> <p>5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.</p> <p>6. Calculators are allowed.</p> <p>7. For Question Numbers 1 and 2 there is an internal choice.</p>			

Q1. A satellite carries aboard two sensors, first with high spatial resolution but low spectral resolution and the second with low spatial resolution but high spectral resolution. (10)
Delineate comparison between the two sensors in mapping the various types of LULC present in Ranchi city.

OR

Q1(a) Discuss line drop-out error on satellite images. (5)

Q1(b) Does the Earth's rotation cause geometric distortion on the satellite image? (5)
Explain with the help of a suitable diagram

Q2 Can the standard FCC of linear contrast stretched bands provide better visual discrimination among the various LULC features as compared to the standard FCC generated from the original bands? If so, explain with suitable reasons. (10)

OR

Q2 In case of low pass filtering, if the kernel size of the moving window is increased (say, from 3x3 to 5x5), will it affect the smoothing of the bands of the original image? If so, explain with suitable reasons. (10)

Q.3(a) What are Band Ratios? Explain their importance. (5)

Q.3(b) Explain the algorithm of any one Change Detection Technique. Can it be carried on non-digital analog maps too? Support your answers with reasons. (5)

Q.4 Compare and contrast Supervised versus Unsupervised Classification Method. (10)

Q.5(a) How are speckles filtered from microwave images? Explain any one model. (5)

Q.5(b) Discuss the applicability of any one software in microwave data processing. (5)

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