

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

**CLASS: MTECH
BRANCH: RS**

**SEMESTER : I
SESSION : MO/18**

**SUBJECT: RS501 PRINCIPLES OF REMOTE SENSING AND DIGITAL SATELLITE IMAGE PROCESSING
TIME: 3.00 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. CO- Course Objective, BL - Blooms Level
 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) Give the important historical landmarks in the development of remote sensing as an art and science. [2]
Q.1(b) Explain radiometric resolution. [3]
Q.1(c) Give a flow diagram, explaining it, of interaction of the EMR with the atmosphere as it reaches the sensor before and after it strikes the sensor. [5]
- Q.2(a) For conducting nationwide agricultural survey, what will be the sensor requirements? Give reasons to support your answer. [4]
Q.2(b) Bring out the differences between remote sensing and geosynchronous satellites, and their respective applications. [3]
Q.2(c) What will be the spectral reflectance pattern of stagnant water and turbid water. [3]
- Q.3(a) Differentiate between Speckle and Noise, and in which sensor these are dominant. [2]
Q.3(b) What is Push broom and whisk broom scanners, and their advantage and disadvantages. [3]
Q.3(c) Explain with illustration the angles of grazing, depression, and incidence. [5]
- Q.4(a) What are the different types of Enhancements applicable in Remote Sensing? Explain 2 image processing techniques in each of those enhancement types. [5]
Q.4(b) You are asked to highlight the linear features appearing along the North-Eastern direction in a given Satellite Image. How will you fulfill this need? [5]
- Q.5(a) Explain image-space and feature-space. Where do you use Feature-Space? Why it is called Feature-space? [5]
Q.5(b) Explain of these classification techniques (a) ISODATA (b) Parallelopiped [5]

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