

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

**CLASS: IMSC  
BRANCH: MATHS & COMP.**

**SEMESTER : V  
SESSION : MO/18**

**SUBJECT: SGI1001-PRINCIPLE OF REMOTE SENSING**

**TIME: 3 HOURS**

**FULL MARKS: 60**

**INSTRUCTIONS:**

1. The question paper contains 7 questions each of 12 marks and total 84 marks.
  2. Candidates may attempt any 5 questions maximum of 60 marks.
  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) What is EMR and how is it related with Atmospheric window? Write wavelength range of atmospheric window in thermal band. [6]
- Q.1(b) What are different types of resolutions associated with any satellite image? [6]
- Q.2(a) Illustrate and explain the working of an Aerial Camera. [6]
- Q.2(b) How does a Push Broom sensor work? Illustrate with example. [6]
- Q.3(a) What are the characteristics of a Sun Synchronous satellite? Why images are always acquired at same local time in the morning by a Sun Synchronous satellite? Give example of any three Indian Sun Synchronous satellites. [8]
- Q.3(b) Match the following [4]
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|---------------------------------------|-----------------------|
| A                                     | B                     |
| i) Mangalyaan                         | Proposed Moon Mission |
| ii) Monitoring of Climate change      | IKONOS                |
| iii) Monitoring of traffic congestion | MODIS                 |
| iv) Chandrayaan-2                     | Mars Mission          |
- Q.4(a) Explain why a Pocket Stereoscope is used in Photogrammetry. [6]
- Q.4(b) Write a note on Relief Displacement. [6]
- Q.5(a) Draw a neat diagram of model Deformation due to shift in 'x' direction. [6]
- Q.5(b) Explain the elements of Interior Orientation. [6]
- Q.6(a) What are the different thermal properties of a terrain and how are they related with each other? [4]
- Q.6(b) What are the geometrical characteristics of a side looking airborne radar (SLAR) image? Discuss with the help of suitable diagrams. [8]
- Q.7(a) Discuss the different applications of remote sensing in the field of agriculture. [4]
- Q.7(b) It is required to determine evaporation from the surface water bodies in a study area. Which spectral ranges are most appropriate to accomplish this task? [8]

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