

Roll No.

Total No. of Pages : 02

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M.Tech. (ECE) (Sem.-3)

REMOTE SENSING

Subject Code : MTEC-PE5C-18

M.Code : 76586

Date of Examination : 20-05-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWELVE marks.

1. a) Write down the characteristics of first space borne hyper spectral sensor. What do you mean by LIDAR LASER footprint?
b) Discuss the various applications of LIDAR data.
2. a) What is the resolution of a sensor? Describe all sensor resolutions.
b) What are the advantages and disadvantages of various remote sensing platforms?
3. a) How do you calculate the LST from the satellite data? Explain with the help of computational flowchart.
b) Discuss the nature of relief displacement in a radar image. What is RADAR hologram in a SAR system? How it is used to produce a miniature image of the original?
4. a) What do you mean by wavelength-frequency-energy relationship of EMR?
b) Distinguish between kinetic temperature and radiant temperature.
5. a) A common measure of transmission for digital data is the baud rate, defined as the number of bits transmitted per second. How many minutes would it take to transmit a 1024×1024 image with 256 intensity levels using a 56 K baud modem?
b) Write short notes on IRS and INSAT.

6. Given a grey-scale image of size 5 inches by 6 inches scanned at the rate of 300 dpi answer the following :
- a) How many bits are required to represent the image? (5)
 - b) How much time is required to transmit the image if the modem is 30 kbps? (5)
 - c) Estimate these two values if it is a binary image. (10)
7. a) Explain the various characteristics of across track and along track scanners.
b) Write short notes and differentiate the spatial and the spectral resolution.
8. a) Discuss the role of remote sensing in pre-flood management strategy and land usage.
b) Write down the role of remote sensing in the natural resources management and water resources.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.