

CBCS SCHEME



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17TE72

Seventh Semester B.E. Degree Examination, Jan./Feb. 2021 Satellite Communication and Remote Sensing

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- Define remote sensing. Illustrate with a neat diagram the main components of a remote sensing system. (10 Marks)
 - What is outer space treaty? What additional principles does it include? (10 Marks)

OR

- Briefly explain the benefits of environmental monitoring from satellite sensors. (10 Marks)
 - Illustrate the milestones in remote sensing observations. (10 Marks)

Module-2

- Explain the following terms with relevant expression as applied to the remote sensing application.
i) Radiant energy ii) Radiant irradiance iii) Emissivity iv) Radiant exitance v) Albedo. (10 Marks)
 - What is meant by special reference signature? Enlist the main factors affecting special signature. (10 Marks)

OR

- Explain the laws governing the behavior and characteristics of electromagnetic radiation with relevant expressions. (10 Marks)
 - What is atmospheric scattering? Write a short note on the three types of atmospheric scattering. (10 Marks)

Module-3

- Define resolution of a sensor system. Briefly explain spatial resolution and temporal resolution of a sensor system. (08 Marks)
 - Explain the principle of working of an along-track scanner and cross track scanner with the help of a neat diagram. (12 Marks)

OR

- Explain the terms range resolution and azimuth resolution of a radar system with appropriate expansions. (10 Marks)
 - Explain lay over and radar shadows with the help of a neat diagram. (04 Marks)
 - Explain the principles of radar altimetry with the help of a neat diagram. (06 Marks)

Module-4

- With the help of a neat block diagram explain the different approaches to interpret digital values required by the sensor. (10 Marks)
 - Explain briefly how remote sensing can be incorporate into each observation project. (10 Marks)

OR

- 8 a. With the help of a neat block diagram explain the generalized procedure for remote sensing imagery. (10 Marks)
- b. Explain in brief about the costs of data acquisition end user requirements of satellite imagery. (10 Marks)

Module-5

- 9 a. With a neat diagram explain hierarchal organization of visual interpretation criteria. (10 Marks)
- b. Briefly explain the elements of visual analysis. (10 Marks)

OR

- 10 a. With the aid of suitcase figure explain the process in color formation. (12 Marks)
- b. Explain with a suitable diagram how shadows help in object recognition. (08 Marks)

