



CBCS SCHEME

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Seventh Semester B.E. Degree Examination, Feb./Mar. 2022 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

- 1 a. With a neat diagram, explain the main components associated with the remote sensing activity. (08 Marks)
- b. List the advantages and limitations of satellite remote sensing. (04 Marks)
- c. What is outer space treaty? What additional principles does it include? (08 Marks)

OR

- 2 a. Outline the benefits of environmental monitoring from satellite sensors. (10 Marks)
- b. Illustrate the milestones in Remote Sensing observation. (10 Marks)

Module-2

- 3 a. Explain about the major spectral bands within Em spectrum that are used in Remote sensing observation with relevant diagram. (10 Marks)
- b. Explain the following energy terms with relevant expressions as applied to Remote Sensing applications:
 - (i) Emittance (M)
 - (ii) Radiant Irradiance (E)
 - (iii) Radiance (L)
 - (iv) Reflectance (ρ)
 - (v) Transmittance (τ)(10 Marks)

OR

- 4 a. Explain about major types of surface reflection over a variety of surface roughness conditions. (10 Marks)
- b. Illustrate the reflectance properties of a green leaf with relevant spectral signature curve? (10 Marks)

Module-3

- 5 a. Define the resolution of a sensor system? List the types of resolution of EO sensors? Briefly explain about spectral resolution and radiometric resolution of a sensor. (10 Marks)
- b. Explain the principle of working of Along track scanner with the help of a neat diagram. Specify any two applications of along track scanner. (10 Marks)

OR

- 6 a. Summarize the range resolution and Azimuth resolution of a Radar system with neat diagram and equation. (10 Marks)
- b. Extend the Non imaging application of Radar Altimetry with the aid of a neat diagram and relevant equation. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

Module-4

- 7 a. What are the variables that can be retrieved from R.S imagery? Briefly explain the constraints in using Remote Sensing data? (10 Marks)
- b. Explain how you would incorporate Remote Sensing into an earth observation project, with a neat diagram. (10 Marks)

OR

- 8 a. With the help of a neat block diagram, explain the different approaches to image interpretation. (10 Marks)
- b. Explain the generalized procedure for the Interpretation of remote sensing imagery with a neat diagram. (10 Marks)

Module-5

- 9 a. With a neat diagram, explain the hierarchical organization of visual interpretation criteria. (10 Marks)
- b. Explain how Shadow's help in object recognition with the help of a suitable diagram. (10 Marks)

OR

- 10 a. With the aid of suitable diagram, explain the process in color formation. (10 Marks)
- b. List the elements of visual interpretation? Explain the effect of Geometric distortions on image interpretation. (10 Marks)
