

# CBCS SCHEME

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15TE72

## Seventh Semester B.E. Degree Examination, Dec.2018/Jan.2019 Satellite Communication and Remote Sensing

Time: 3 hrs.

Max. Marks: 80

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

### Module-1

- 1 a. Illustrate the milestones in the remote sensing observation. (08 Marks)  
b. What is outer space treaty? What additional principles does it include? (08 Marks)

OR

- 2 a. Briefly explain the benefits of environmental monitoring form satellite sensors. (12 Marks)  
b. Write down the role of the following in remote sensing :  
i) MODES ii) UNOOSA iii) TIROS iv) ERTS. (04 Marks)

### Module-2

- 3 a. Explain the major spectral bands within EM spectrum that are used in remote sensing observations. Draw a relevant figure. (08 Marks)  
b. Explain the following terms with relevant expressions as applied to remote sensing applications.  
i) Radiance ii) Emissivity iii) Reflectance iv) Transmittance. (08 Marks)

OR

- 4 a. Explain the laws governing the behavior and characteristics of electromagnetic radiation with relevant expressions. (08 Marks)  
b. What is spectral signature? Enumerate the main factors affecting it in the solar region of the EM spectrum. (08 Marks)

### Module-3

- 5 a. Explain the terms range resolution and azimuth resolution of a radar system with appropriate expressions. (08 Marks)  
b. Explain the principles of radar altimetry with the aid of a neat diagram. (08 Marks)

OR

- 6 a. Define resolution of a sensor system. Briefly describe different types of resolutions. (08 Marks)  
b. Explain the principle of working of an along-track scanner with the help of a neat diagram. (08 Marks)

**Module-4**

- 7 a. With the help of a neat block diagram explain the different approaches to interpretate digital values required by the sensor. (06 Marks)
- b. With the aid of a neat diagram, explain how would you incorporate remote sensing into an earth observation project. (10 Marks)

**OR**

- 8 a. What are the types of variables that can be retrieved from remote sensing imagery? (06 Marks)
- b. With the aid of a neat block diagram explain the generalized procedure for the interpretation of remote sensing imagery. (10 Marks)

**Module-5**

- 9 a. With a neat diagram, explain hierarchical organization of visual interpretation criteria. (08 Marks)
- b. With the aid of suitable figures explain the process in color formation. (08 Marks)

**OR**

- 10 a. Explain how shadows help in object recognition with the help of a suitable diagram. (06 Marks)
- b. Briefly explain the elements of visual analysis. (10 Marks)

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