



9. Which hyperspectral imager was launched in 2006 and was used in Chandrayaan-1 mission?
  - a. GERIS
  - b. HySI
  - c. AVIRIS
  - d. HYDICE
10. Minimum \_\_\_\_\_ of overall accuracy is acceptable for classification validation.
  - a. 60%
  - b. 70%
  - c. 80%
  - d. 90%
11. Which color is having largest wavelength in visible spectrum?
  - a. Red
  - b. Blue
  - c. Green
  - d. Yellow
12. \_\_\_\_\_ is the most widely used term to denote the elements of a digital image.
  - a. Pixel
  - b. Number
  - c. Coordinates
  - d. None
13. \_\_\_\_\_ is used to increase the dynamic range of the gray levels in the image being processed.
  - a. Contrast Range
  - b. Contrast Image
  - c. Contrast Stretching
  - d. Intensity Stretching
14. \_\_\_\_\_ process an image with pixel-by-pixel transformation based on the histogram statistics or neighborhood operations.
  - a. Frequency domain methods
  - b. Frequency filtering methods
  - c. Spatial domain methods
  - d. None
15. In the first category of segmentation algorithm, the approach is to partition an image based on abrupt changes in intensity, such as \_\_\_\_\_.
  - a. Range in an image
  - b. Points in an image
  - c. Pictures in an image
  - d. Edges in an image
16. Which form of image interpretation is less expensive?
  - a. Visual interpretation
  - b. Digital interpretation
  - c. Both (a) and (b)
  - d. None of the above
17. Which of the following is/are example of image processing system?
  - a. ERDAS Imagine
  - b. ENVI
  - c. PCI Geomatica
  - d. All of the above
18. Basic steps for filtering in the frequency domain:
  - a. Fourier transform
  - b. Filter function
  - c. Inverse fourier transform
  - d. All of these
19. The digital image process, which involves algorithms that examine the unknown pixels in the image and aggregate them into a number of classes based on the natural Groupings or cluster present in the image is known as-
  - a. Spectral enhancement technique
  - b. Supervised classification technique
  - c. Unsupervised classification technique
  - d. Image transformation technique

20. Which of the following is supervised classification method?
- a. Isodata
  - b. Maximum Likelihood Classifier
  - c. Chain method
  - d. All of the above

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( Descriptive )

Time : 2 hrs. 30 mins.

Marks : 50

*[ Answer question no.1 & any four (4) from the rest ]*

1. What are the various fundamental steps in digital image processing? Explain. 10
2. a. Explain about image smoothing using Ideal low pass filter. 5+5=10  
b. Define Laplacian of Gaussian.
3. What is digital image classification? Differentiate between supervised and unsupervised classification 2+4+4  
=10
4. a. Explain significance of histogram in digital image processing. 5+5=10  
b. Explain linear contrast enhancement.
5. What is accuracy assessment? How accuracy assessment is calculated? Write about different components with suitable formulae that are calculated in order to get accuracy of a classification 2+2+6  
=10
6. a. What is an orbit? What are different types of orbit? Distinguish between geostationary and sun synchronous satellite citing suitable examples. 5+5=10  
b. Discuss different types of resolution.
7. Write short notes on 5+5=10
  - a. Spectral response of vegetation and factors affecting it.
  - b. Principles of thermal remote sensing.
8. What is the desirable spatial resolution required for landscape level analysis and military surveillance? Write an explanatory note on application of remote sensing in natural resource management. 2+8=10

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