3/31

0105N106

Candidate's Seat No :_____

MSc Sem.-2 Examination

407

Geoinformatics

May-2025

Time : 2-30 Hours] **[Max. Marks : 70**

1. Write the following: 14

i. Explain advantages of microwave remote sensing.

ii. What do you mean by hyperspectral remote sensing? Explain details.

OR

i. Explain Thermal remote sensing in details.

ii. What is Lidar remote sensing. Explain details.

2. Write the following: 14

i. Explain difference between surface and volume scattering in microwave remote sensing.

ii.Explain advantages of microwave remote sensing

OR

i. What is spectral unmixing model

ii. Explain advantages of hyperspectral remote sensing

3. Write the following: 14

i. Explain difference between thematic accuracy and geometrical accuracy.

ii. write fewapplications of microwave remote sensing

OR

i. What is difference between precision and accuracy?

ii.Explain thermal remote sensing

4. Write the following: 14

I. What is supervised image classification

ii. What is unsupervised image classification

OR

(P.T.O)

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i. Explain Maximum likelihood classifier

ii. Explain Clustering technique

5. Attempt any 7 out of 12: (MCQ) 14

i). Which is correct in order on increasing frequency:
a. L-band, X-Band, C-band, S-band
b. L-band, S-band, C-band, X-band
c. S-band, X-band, C-band, L-band
d. X-band, C-band, S-band, L-band

ii) Which of the following provide thermal data:
a. Sentinel-1
b, Sentinel-2
c. Sentinel-3
d. Landsat-1

iii) Which of the following is wrong statement:
a. Flood mapping can be done with a radar image
b. Radar images can be acquired at different polarization
c. Radar images of hilly terrain are distorted
d. SAR images are not useful for soil moisture studies

iv) Which of the following is wrong statement:
a. Supervised image classifier is not a pixel-based classifier
b. Supervised image classification requires ground truth
c. Supervised image classification requires training windows.
d. Maximum likelihood classifier is a supervised classifier

v) Which of the following is right statement:
a. Unsupervised image classifier is a contextual classifier
b. Unsupervised image classification does not require any training
c. maximum likelihood classifier is an unsupervised image classification method
d. None of above

vi)Which of the following is correct statement

a. Hyperspectral bands are contiguous broad band

b.Hyperspectral remote sensing does not provide subpixel information.

c. Sentinel-2 is a hyperspectral remote sensing satellite

d. Hyperspectral sensors are passive sensors

vii. Which of the following is active sensor:
a. SAR
b thermal Radiometer
c. Microwave Radiometer
d. LISS – 4

viii. Which of the following is correct statement:
a. Lidar is anactive instrument.
b. Radar is a passive instrument.
c. LiSS-3 is an active instrument
d. Radar altimeter is a passive instrument.

ix) Which of the following is right statement:
a. Lidar is a coherent sensor
b. Lidar is a passive remote sensing instrument
c. Lidar can not be operated in night
d. Lidar sensor does not provide building height

x) Which of the following statement is wrong:
a.SAR sensor uses microwave signal
b. SAR is a passive sensor.
c. Radar signal can penetrate the cloud
d. SAR can provide flood information

xi)Which is correct statement:
a. Image accuracy and precision has same meaning.
b. Thematic accuracy and precision have same meaning
c. Image classification can be done using clustering technique.
d. Texture analysis does not use information from neighbouring pixels

xii) Which of the following spectral bandwidth belong to Hyperspectral band:

a) 400- 500 nm

b) 500 - 510 nm

c) 500 – 550 nm

d) 555 to 600 nm