1604N190

Candidate's Seat No :_____

M.Sc Semester-2 Examination

407

Geoinformatics

April-2024

Photogrammetry and Digital Image Processing

Time: 2.30 Hrs.

Total Marks: 70

1. Write the following: (Each question is of 7 marks)

i. What is microwave remote sensing. Explain details.

ii. What is hyperspectral remote sensing? Explain details.

OR

i. What is Thermal remote sensing. Explain details.

ii. What is Lidar remote sensing. Explain details.

2. Write the following: (Each question is of 7 marks)

i. Explain Supervised image classification

ii. Explain Unsupervised image classification

OR

i. Explain Maximum likelihood classifier

ii. Explain Clustering technique

3. Write the following: (Each question is of 7 marks)

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

ii. Explain advantages of microwave remote sensing

OR

i. Explain spectral unmixing method

ii. Explain advantages of hyperspectral remote sensing

4. Write the following: (Each question is of 7 marks)

i. Explain difference between thematic accuracy and classification accuracy.

ii. Explain applications of microwave remote sensing

OR

i. What is difference between precision and accuracy?

ii. Explain applications of hyperspectral remote sensing

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 SAR data:
a. Sentinel-1
b, Sentinel-2
c. Sentinel-3
d. Landsat

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 oilspills detection

iv) Which of the following is wrong statement:
a. Supervised image classifier is a pixel-based classifier
b. Supervised image classification requires training
c. Supervised image classification is contextual classifier
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. Unsupervised image classification cannot be used for thermal image analysis.
d. None of above

vi. Which of the following provide thermal data:
a. IRS
b, SPOT
c. Sentinel-1
d. Sentinel-3

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 a passive instrument.
b. Radar is a passive instrument.
c. LiSS-3 is an active instrument
d. Radar altimeter is an active instrument.

ix) Which of the following is wrong statement:
a. Lidar is a coherent sensor
b. Lidar is a passive remote sensing instrument
c. Lidar can be operated at any time of day or night
d. Lidar sensor uses laser as a source of radiation

x) Which of the following statement is wrong:
a. SAR sensor uses microwave signal
b. azimuthal resolution and range resolution have same meaning
c. SAR is an active sensor.
d. Radar signal can penetrate the cloud

xi) Which statement(s) is/are CORRECT for Hyperspectral images?
a. Bandwidth is large.
b. Bandwidth is narrow.
c. Number of bands are few.
d. Bands are not contiguous.

xii) Which is correct statement:
a. Image accuracy and precision has same meaning.
b. Lidar instrument can be used for spectral signature studies
c. Image classification cannot be done using clustering technique.
d. Lidar provides information on building height

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