DAS 703/Geographic Information Systems/Term I 2024-25/T1-24-25-DAS 703 [#254]

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Test Start Time
12/3/2024, 9:00:00 AM

Marks Scored
52.0 / 60.0

Total Questions
9

Attempted Questions
9

Correct Questions
9

Incorrect Questions
0

Skipped Questions
0

Pending Evaluation
0

Answer Key

No answer key available for this test. Please contact your exam division/cell.

Answer Script

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↺   ⊖   44 %   ⊕   ↻

4. The band width of the region = 400 - 900 nm
$$= 500 \text{ nm}.$$

* The instrument carries 228 bands with spectral res of 1.8 nm.
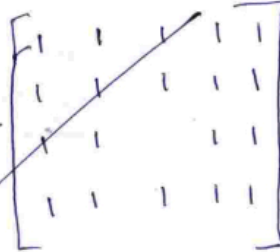$$= 228 \times 1.8 \text{ nm}$$
$$= 410.4 \text{ nm}$$

∴ as 410.4 < 500 we can say that there will be <u>no</u> spectral overlap b/w the bands

5. <u>low pass filter</u>

$$[5 \times 5] \text{ filter} = \frac{1}{9} \begin{bmatrix} 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 \end{bmatrix}$$

<u>High pass filter</u>

$$[5 \times 5] \text{ filter} = \frac{1}{24} \begin{bmatrix} 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 23 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 \end{bmatrix}$$

DO NOT WRITE HERE
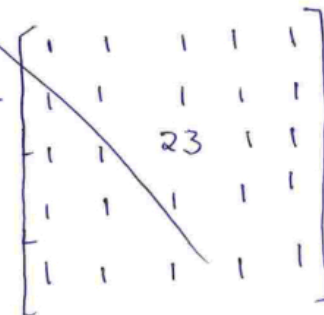
2

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List of Sections

0				Marks per question : 6.0	Marks Scored : 6.0
Q No.	Q. Type	Status	Marks		
1	File Upload	✔	6.0	Hide Answer	

1. What information is contained in a histogram of image data? Explain the transfer functions as shown in Figure 1 (a), (b) and (c).
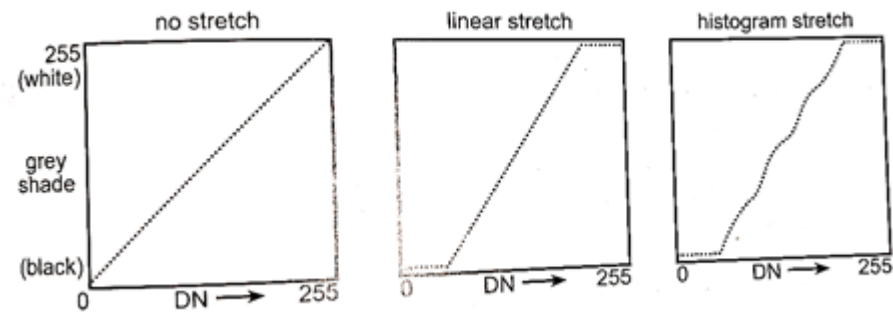

Figure 1.

| 0 | | | | Marks per question : 4.0 | Marks Scored : 4.0 |
| Q No. | Q. Type | Status | Marks | | |

| 1 | File Upload | ✔ | 4.0 | Hide Answer |

2. Explain Figure 2. What is it conveying?
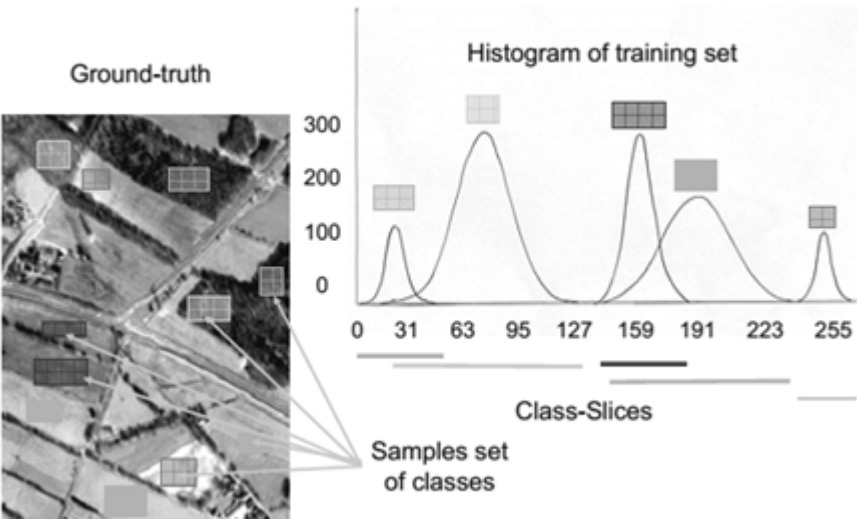
Figure 2.

| 0 | | | | Marks per question : 5.0 | Marks Scored : 5.0 |
| Q No. | Q. Type | Status | Marks | | |

| 1 | File Upload | ✔ | 5.0 | Hide Answer |

3. Apply an averaging filter on the image shown as "Input" in Figure 3 (a), and fill up the value in the highlighted pixel/box in Figure 3 (b) shown as "Output".
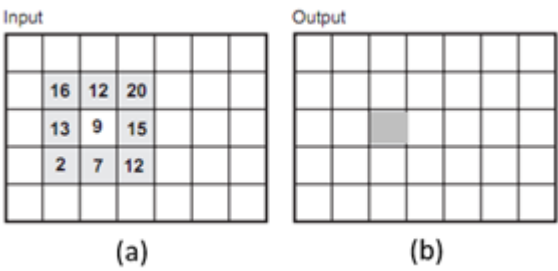

Figure 3.

| 0 | | | | Marks per question : 5.0 | Marks Scored : 5.0 |
| Q No. | Q. Type | Status | Marks | | |

| 1 | File Upload | ✔ | 5.0 | Hide Answer |

4. You are a Space Scientist. You have to design a Hyperspectral Scanner sensitive to radiation in the 400 to 900 nm region of the electromagnetic spectrum. The instrument will carry 228 bands with spectral resolution of 1.8 nm. Does this configuration result in spectral overlap between the bands?

| 0 | | | | Marks per question : 10.0 | Marks Scored : 7.0 |
| Q No. | Q. Type | Status | Marks | | |

| 1 | File Upload | ✔ | 7.0 | Hide Answer |

5. Explain the "Image" shown in Figure 4 with respect to *sub-pixel classification* with reference to the "Terrain". Discuss a possible solution to the problem.
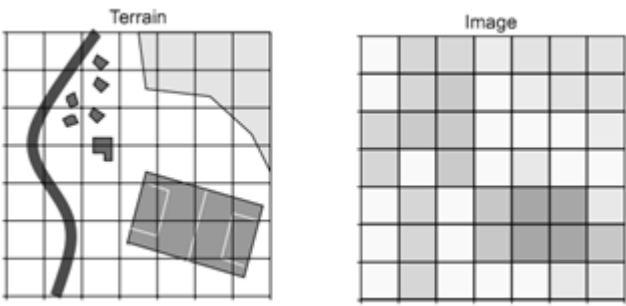

Figure 4.

Evaluator Comments

Not Explained Linear mixture model along with equations nd constraints.

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0 | Marks per question : 10.0 | **Marks Scored : 8.5**

Q No. | Q. Type | Status | Marks

| 1 | File Upload | ✔ | 8.5 | Hide Answer |

6. What is attribute accuracy in satellite image classification? Explain Omission error, Commission error, Producers accuracy, Users accuracy and Overall accuracy using a sample error matrix.

Evaluator Comments

Overall accuracy missed.

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0 | Marks per question : 10.0 | **Marks Scored : 8.0**

Q No. | Q. Type | Status | Marks

| 1 | File Upload | ✔ | 8.0 | Hide Answer |

7. What is Geocoding? Why is it required? How is georeferencing done? What are the different resampling techniques?

Evaluator Comments

requirement of geocoding has not been given, still 0.5 marks have been awarded.
apart from that, ans is well written

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0 | Marks per question : 5.0 | **Marks Scored : 3.5**

Q No. | Q. Type | Status | Marks

| 1 | File Upload | ✔ | 3.5 | Hide Answer |

8. Define coefficients of a 5 x 5 low and high pass filter with applications.

Evaluator Comments

matrix of low and high pass filter are totally wrong, still only half half marks have been cut. and also applications are not relevant to gis, you should have written in construct of gis uses. so half marks have been deducted.

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0 | Marks per question : 5.0 | **Marks Scored : 5.0**

Q No. | Q. Type | Status | Marks

| 1 | File Upload | ✔ | 5.0 | Hide Answer |

9. _____ is the ratio between the distance on a paper map and the distance of the same stretch in the terrain while _____ is associated with the cell width of the tessellation applied. Discuss the above statement with examples.