

MSLIS Semester 4
MIDTERM TEST
Paper 21: Geographical Information Systems
23 February 2017
(11.30AM - 1.30PM)

Q1. Write a brief note on the following:

[12 marks]

- (a) Geographic Information Science (GISci)
- (c) Role of scale in spatial and temporal models
- (d) Euclidean Distance
- (f) Spatial interpolation

Q2. Write complete set of equations involved in hierarchical generation of morphological medians between the two spatial fields f^i and f^j . Generate two levels of morphological medians between the source spatial field (Figure 1a) and the target spatial field (Figure 1b).

[15 marks]

175	81	235	12	98	238
193	95	242	190	195	204
229	222	94	245	160	73
	(a)			(b)	

Figure 1. The two spatial fields (a) f^i , and (b) f^j

Q3. What is K-Means Clustering? By employing the K-Means clustering procedure, cluster the data containing two variables (x and y) created of your choice. Write your conclusions about the relevance of K-Means Clustering in the context of Geographical Information Science. (Hint: choose $K = 2$).

[13 marks]