2017

M.Sc.

2nd Semester Examination

REMOTE SENSING AND GIS

PAPER—RSG-201

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Use Separate answer book for each Group.

Group–A

(*Digital Image Processing*)

[Marks : 20]

Answer any *two* questions. 2×10

1. Describe three important data formats for storing digital data using suitable example. 10

2. (a) Why is it necessary to rectify an image ?

(b) What are different resampling techniques normally used in rectification process ? 3+7

3. (a) What is spatial filtering ? Explain different types of spatial filter.

(b) Why spatial filtering is very much important for information extraction from an image ? 2+3+5

4. Write short notes on the following : $2\frac{1}{2} \times 4$

(a) Contrast stretching.

(b) Gray level slicing.

(c) Purpose of image averaging.

(d) Masleing.

Group–B

(*Information Extraction from Satellite Images*)

[Marks : 20]

Answer any *two* questions. 2×10

1. (a) Compare :

(i) Unsupervised,

(ii) Supervised and

(iii) Object-based image classification techniques.

(b) What are parametric and non-parametric decision rules ? 6+4

2. (a) What are advantages and disadvantages of minimum distance classifiers ?

(b) Explain ISODATA clustering algorithm ?

(c) How ISODATA differs from k-Mean clustering algorithm ? 3+4+3

3. (a) What are different sampling strategies normally followed for collection of ground truths required for post classification accuracy assessment ?

(b) Explain Total or Overall accuracy along with its shortfall in reporting accuracy assessment.

(c) What is the significance of K_{Hat} coefficient of error matrix ? 2+3+3

4. Write short notes on any *two* of the following : 2×5

(a) Feature space plot.

(b) Change detection.

(c) Colour space transformation (RGB $\rightleftharpoons$ IHS).

(d) Hand logic in digital classification.
