2013

M.Sc.

1st Semester Examination

REMOTE SENSING & GIS

PAPER—RSG-102

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.

Group—A

[Photogrammetry]

(Marks—20)

Answer any *two* questions from the following :

1. Explain the following characteristics of Aerial photography :

(i) Synoptic view;

(ii) Time freezing ability;

(iii) Capability to stop action;

(iv) Three dimensional perspective.

(Turn Over)

2. What is camera calibration ? Illustrate about the colour mixing process of the colour film.

4+6

3. What do you mean by photo control ? How does it help in georeferencing ? Mention the major surface features that are used as photo controls with appropriate illustrations.

3+3+4

4. Short Notes (any *two*) : 5+5

(a) Filter;

(b) Radiometric resolution;

(c) Orientation;

(d) Analytical Plotters.

Group—B

[Stereo Photogrammetry]

(Marks—20)

Answer any *two* questions from the following.

1. What are the characteristics of image parallax ? Explain with illustration about parallax displacements on overlapping vertical photographs and derive the fundamental equation

4+6

2. Classify aerial photographs based on orientation of the camera axis. Define 'exposure station', 'optical axis' , 'photo base', and 'isocentre'. How shape, size and association help in delineation of different linear features of air photo ? Depict the opposing role of shadow in image interpretation.

2+4+3+1

3. Depict the relationship between ground coverage of an aerial photograph with the flying height and focal length of the camera.

Develop a flight plan for a circular island with a radius of 7 km. The focal length of the camera is 152.4 mm, desired photo scale, end lap and side lap are 1 : 25,000, 60% and 30% respectively and the average terrain height is 30 m above sea level.

3+7

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

(a) Derivation of the scale of an aerial photograph.

(b) Difference between orthophotography & standard photography.

(c) Nature of relief displacement in single vertical aerial photograph.

———