# MGIS-06

# Photogrammetry

Master of Geographical Information System Post Graduate Diploma in Geographical System (MGIS/PGDGIS–11/16)

Second Year, Examination, 2017

### Time : 3 Hours

# Max. Marks : 80

Note: This paper is of eighty (80) marks containing three (03) Sections A, B and C. Learners are required to attempt the questions contained in these Sections according to the detailed instructions given therein.

# Section-A

# (Long Answer Type Questions)

- **Note :** Section 'A' contains four (04) long answer type questions of nineteen (19) marks each. Learners are required to answer *two* (02) questions only.
- 1. Briefly explain about areal triangulation in photogrammetry. What is its role in the accuracy photogrammetry data ?
- 2. What is relative orientation ? How does it differ from absolute orientation ?
- 3. Give a brief description about the *three* types of errors in photogrammetry.

4. Imagine a camera that produces a photo of about 1 : 20,000 scale at height of 10,000 feet. You need a photo at a scale of approximately 1 : 10,000. What would be the height of the aircraft to produce this scale -- 5,000 feet or 20,000 feet ? Explain.

#### Section-B

#### (Short Answer Type Questions)

- **Note :** Section 'B' contains eight (08) short answer type questions of eight (08) marks each. Learners are required to answer *four* (04) questions only.
- 1. What are the parameters of inner orientation ?
- 2. Write down the *eight* elements of aerial photo interpretation.
- 3. What is relief displacement ?
- 4. What is photo scale ?
- 5. Define nadir point and control point in term of aerial photogrammetry.
- 6. If a distance of a line on the photograph is known as 1 cm. What is it's equivalent distance on a ground if the photographic scale is 1 : 10000 ?
- 7. Write *eight* application areas of aerial photogrammetry.
- 8. List out *eight* informations that can be obtained from an aerial photograph.

#### [3]

### Section-C

# (Objective Type Questions)

- **Note :** Section 'C' contains ten (10) objective type questions of one (01) mark each. All the questions of this Section are compulsory.
- 1. How many fiducial marks are visible in an aerial photograph ?
  - (a) 2 or 4
  - (b) 4 or 8
  - (c) 6 or 8
  - (d) 8 or 12
- 2. The relief displacement of a minar 72 m high on photograph is 7.2 mm and its top appears 10 cm away from principal point. The flying height of the camera, is :
  - (a) 1000 m
  - (b) 500 m
  - (c) 2000 m
  - (d) 1500 m
- 3. The height displacement on a vertical photograph :
  - (a) Increases as the horizontal distance increases from the principal point
  - (b) Increases as the ground elevation increases
  - (c) Both (a) and (b)
  - (d) Decreases as the flying height increases

- 4. Accuracy is a term which indicates the degree of conformity of a measurement to its :
  - (a) Most probable value
  - (b) Mean value
  - (c) True value
  - (d) Standard error
- 5. Precision is a term which indicates the degree of conformity of :
  - (a) Measured value to its true value
  - (b) Measured value to its mean value
  - (c) Measured value to its weighted mean value
  - (d) Repeated measurements of the same quantity to each other
- 6. The principal line is the line joining the principal point and :
  - (a) Nadir
  - (b) Isocenter
  - (c) Perspective centre
  - (d) None of these
- 7. The point on the celestial sphere vertically below the observer's position, is called :
  - (a) Zenith
  - (b) Celestial point
  - (c) Nadir
  - (d) Pole

- 8. A defined spatial reference system is needed for :
  - (a) Co-registration of spatial data sets
  - (b) Finding spatial data on the internet
  - (c) Making correct spatial measurements
  - (d) To spatially index a data set
- 9. A GEOID describes the shape of the earth as :
  - (a) a rotational ellipsoid
  - (b) a physically defined surface, where the direction of gravity is perpendicular to the surface
  - (c) a pear
  - (d) a complex, geodetically adjusted spheroid optimized for global applications
- 10. A and B are two towers of equal height diametrically opposite on either side of the nadir point, at 3 km and 5 km distances. Which one of the following statements is correct ?
  - (a) Height displacement of A will be less than that of B
  - (b) Height displacement of B will be less than that of A
  - (c) Height displacement of A and B is equal
  - (d) Height displacement of A and B will be towards each other

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