Roll No. ……..

MGIS–06

Phytogrammetry

Master of Geographic Information System
(MGIS–11/16)
Second Year, Examination, 2018

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. Explain in brief the concept of digital ortho-photo. Write down the steps involved in the generation of an ortho-photo. List some of the applications of ortho-photo.
2. Briefly explain about image parallax and its relation with stereoscopic viewing of aerial photographs. Draw a diagram to explain parallax in aerial photos.
3. Explain in brief the classification of aerial photo based on the alignment of optical axis. Draw the diagram to explain the principal point, focal length, fiducial marks and optical axis of aerial photograph.

4. Solve the following problems on aerial photographs :

   (a) You measure the straight length of a track to be 2.5 mm and you know that the real ground distance is 100 metres, what is the scale of the photo ? 6

   (b) A camera with a 152 mm focal length takes an aerial photograph from a flying height of 2780 m above sea level and the average elevation of the terrain above sea level is 500 m. What is the scale of the photograph ? 7

   (c) The scale of an aerial photograph is 1:15,000. In a photo, you measure the length of a bridge to be 0.25 inches, what is the length of the bridge in feet in real life ? 6

Section–B

(Short Answer Type Questions)

Note : Section 'B' contains seven (07) short answer type questions of eight (08) marks each. Learners are required to answer *four* (04) questions only.

1. What are the *six* parameters of external orientation.
2. Write the *three* causes of relief displacement.
3. Define photogrammetric block.
4. Explain the terms "association" and "pattern" as key elements of aerial photo interpretation.
5. A rectangular agricultural field measures 8.65 cm long and 5.13 cm wide on a vertical photograph having a scale of 1:20,000. Find the area of the field at ground level in hectares.
6. What is the relevance of base-height ratio in aerial photogrammetry ?
7. Define interior orientation in aerial photogrammetry.

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 location photographs are required (at least) for photogrammetry ?

   (a) 2 (b) 4

   (c) 1 (d) 3

2. Which of the following is not a key element of visual photo interpretation ?

   (a) tone (b) texture

   (c) pattern (d) radiometry

3. What is the fundamental principle of photogrammetry ?

   (a) Interference

   (b) Resection principle

   (c) Triangulation

   (d) Intersection principle

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. The point on the celestial sphere vertically below the observer's position, is called :

   (a) Celestial point (b) Nadir

   (c) Zenith (d) Pole

6. The principal line is the line joining the principal point and :

   (a) Nadir (b) Isocenter

   (c) Perspective centre (d) None of these

7. Which of the following is not a parameter of interior orientation ?

   (a) Principal point

   (b) Fiducial mark coordinates

   (c) Focal length

   (d) None of the above

8. The average eye base is assumed as :

   (a) 60 mm (b) 62 mm

   (c) 58 mm (d) 64 mm

9. The flying height of the camera is 1000 m above mean ground level, the distance of the top of a Minar from a Nadir point is 10 cm and the relief displacement of Minar is 7.2 mm. The height of the Minar, is :

   (a) 82 m (b) 72 m

   (c) 52 m (d) 62 m

10. On vertical photographs, height displacement is :

    (a) zero for points vertically below the air station

    (b) negative for points below datum

    (c) Both of the above

    (d) positive for points above datum