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SVG518: Photogrammetry and Remote Sensing II

First Semester Examination, 2019/2020 Session

DURATION: 1 Hour 45 Minutes

Instructions: Answer **all** Questions in Section A. Fill in the missing data/gaps in questions 'a-f' and affirm whether the expressions in 'g-p' are either **True** or **False**
In Section B, answer **Question 1** and any **other One (Please turn over for section B)**

SECTION A

- a. The overlap of photographs in the direction of flight line is called ----- or -----
- b. For satellite imagery, the total number of frames to cover the area is calculated from?----- and -----
- c. The overlap between adjacent flight lines is known as----- or -----
- d. The photogrammetric mapping stage that involves collection of vector data is known as-----
- e. ----- is the final stage of photogrammetric mapping procedure?
- f. The major governing factors for the choice of scale in the production of small and medium scale topographic maps are----- and -----?
- g. Straight and parallel flight lines must be maintained to close the gaps between adjacent strips.
- h. The number of individual images required to cover a given area decreases with the increase in the overlap.
- i. Due to increased flying height, haze and dust increases the quality of the photographs.
- j. The scale of the photography increases with the decrease in the flying height.
- k. When the scale of the photography increases, less details for greater height accuracy are obtained.
- l. When the flying height decreases, more details for greater height accuracy are obtained.
- m. The cost of the flying at greater flying height is excessive as compared to that of low flying height.
- n. Increase in flying height of the aircraft leads to increase in the number of photographs required for any particular area of land.
- o. Images are taken at the proper interval along strips to give the desired overlap between successive images in a given strip.
- p. In strip formation, each strip is spaced at pre-determined distances to ensure desired side lap between adjacent strips.

SECTION B

1a. A camera of 30 cm focal length was used to photograph an area measuring 32 km long in the east-west direction and 28 km long in the north-south direction at an elevation of 350 m above datum for the purpose of mosaic construction. The adopted average scale is 1: 10,000 and the photograph size is 15 cm x 15 cm at 70 % endlaps and 30% sidelaps. An intervalometer will be used to control the interval between exposures. The ground speed of the aircraft will be maintained at 150 km per hour. The flight lines are to be laid out in a north-south direction on an existing map having a scale of 1:50,000. The two outer flight lines are to coincide with the east and west boundaries of the area. Determine the data for the flight plan.

2a. You have been commissioned to carry out the mapping of the entire Bosso campus of the University using UAV-Photogrammetry. Describe how you will execute this project from project initiation to deliverables.

2b. What are the factors to be considered in photogrammetric cost estimation?

3a. Given a satellite image of 30m spatial resolution, with mild evenly distributed salt and pepper noise, describe the necessary operations you will carry out in order to produce a land cover map from it, stating the algorithms you will be using at each stage of the operation and why.

3b. List 5 importance of ensuring adequate overlap in photogrammetric mapping.