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**SVG412: Photogrammetry and Remote Sensing I**
**DURATION: 1 hour 30 minutes.**

**Instructions**: Answer **all** Questions in Section A. Fill in the missing data/gaps in questions '**a-e**' and affirm whether the expressions in '**f- n**' 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 choice of flying height above the ground depends upon ---------- and ----------

b. In the preliminary estimate, the number of photographs required for a photogrammetric project is computed by dividing ---------- by ----------?

c. The extent of the ground control required is determined by (a) ----------, (b) ----------, and (c)----------

d. The methods of establishing photo controls are---------- and ----------?

e. The methods of marking the positions of ground control points on the photographs are---------- and ---------- [post-pointing or pre-pointing methods].

f. The largest scale of maps that can be produced by photogrammetric means in an economic way is 1: 1000?

g. The flying height of the camera depends on the scale of the photography

h. When photographs are taken with overlap, the entire area may be examined stereoscopically

i. The area of ground covered by each photograph decreases with the increase of the flying height of the aircraft

j. The scale of a photograph is directly linked with the accuracy of the map that can be produced from it.

k. Distortions caused by the lens and by the tilt, and the relief displacements are less pronounced in the outer part of the image than near the centre.

l. In the stereoscopic examination, objects cannot be viewed from more than one angle even if sufficient overlap is provided.

m. Sufficient overlap allows object to be stereoscopically viewed from different angles.

n. In photogrammetric mapping, ground control is essential for establishing the position and orientation of each photograph in space relative to the ground.

## SECTION B

1. Given the following details alongside the C-factor, compute the necessary parameters required for the design of a flight plan for photogrammetric data acquisition for topographical mapping;

a. Ground area of 3,500m by 2,500m
b. Ground coverage per image frame is 200.10m by 142.86m
c. Camera focal length is 15mm
d. 80% Side and forward overlap
e. Contour Interval of 0.5m

2a. There are different major components involved in the procedures of photogrammetric mapping. Discuss these components with the aid of a details chart.
2b. Highlight some image characteristics that aid digital image interpretation.

3a. Write short notes image classification, with emphasis on types, their merits, demerits.
3b. Explain two applications of coplanarity condition equation.