Department of Surveying and Geoinformatics
School of Environmental Technology
Federal University of Technology
Minna, Nigeria

SVG714: Photogrammetry and Remote Sensing

First Semester Examination, 2019/2020 Session

MTech Class

DURATION: 3 Hours.

Instructions: (a). Answer **ALL** questions in both sections
(b). Time allowed for section A is **2 hours**, while the time allowed for section B is 1 hour only
(c). The Section B is an 'open-laptop' examination. Please open your Laptop computer and use the pre-installed software to provide necessary answer to the question.
(d). You must conclude section A and submit your scripts before commencing section B.

SECTION A

1. (a) Describe the fundamental imaging characteristic of an ideal camera and provide a simplified linearization of collinearity condition equation.
   (b) Write short notes on block adjustment.

2. Your organization has been commissioned to execute the mapping project of your State. As the project team leader and as an expert in photogrammetry and remote sensing, describe how the project will be executed from the project initiation to deliverables using photogrammetric approach.

3. Given a satellite image of 30 m spatial resolution, describe how land cover maps can be obtained or generated from it, stating the image pre-processing and processing techniques you will adopt and why.

SECTION B (Practical [hands on] exercise)

Using SNAP software with Sentinel Toolboxes, execute the following operation on the provided Sentinel image, describing the procedure and documenting same your answer booklet.

1. Image resampling.
2. Spatial and Spectral Subset.
3. Computation of NDVI and creation of crop/vegetation mask.

Your resultant output should be saved in a folder (the folder name should be your name and registration number), and ensure that your folder is saved on the dedicated memory device (flash drive) as a proof of submission.