

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

**FACULTY OF APPLIED SCIENCES
DEPARTMENT OF FOREST RESOURCES AND WILDLIFE MANAGEMENT
BACHELOR OF SCIENCE HONOURS DEGREE
MAIN EXAMINATION**

FOREST SURVEYING AND REMOTE SENSING: EFW 4201

May 2013

Time Allowed: 3 Hours

Total Marks: 100

INSTRUCTIONS TO CANDIDATES:

Answer **QUESTION ONE** and any **THREE** others. Each question carries **25 marks**.

1. (a) With **TWO** examples in each case, differentiate between plane and geodetic surveying. **[8 marks]**

(b) Explain how aerial photographs can be used in vegetation classification and mapping. **[17 marks]**
2. With the aid of illustrations, describe the procedure of conducting a physiognomic survey of a 100 ha partition of woodland at Chesa Forest Area, citing the main factors to be considered.
3. With the aid of a clearly annotated diagram, justify the use of the spectral reflectance signature to discriminate between soil, vegetation and water in Landsat Thematic Mapper Satellite multi-spectral images.
4. The introduction of GPS has revolutionised forest surveying and mapping. Discuss.
5. Explain the way Forestry Commission combines aerial photography and satellite remotely sensed imagery to produce woody cover maps.
6. (a) Discuss the orbital and sensor characteristics of Landsat Thematic Mapper 4. **[15 marks]**

(b) Justify the use of SPOT Satellite imagery in topographical mapping. **[10 marks]**

***** END OF PAPER *****