NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

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

SOIL CHEMISTRY AND FERTILITY: EFW 4204

May 2014 **Time Allowed: 3 HOURS** **Total Marks: 100**

INSTRUCTIONS TO CANDIDATES:
Answer **QUESTION ONE** and any other **THREE**. Each question carries **25 marks.**

1. (a) Define cation and anion exchange capacity. **[5 marks]**

(b) Describe how exchange capacity is affected by identified conditions that obtain in the soil at various times. **[20 marks]**

2. Discuss management and maintenance of the fertility of soils, during commercial activities in forests and woodlands.

3. (a) Identify the range of organisms present in a healthy soil. **[10 marks]**

(b) Explain the contribution of these organisms to the general health of the soil ecosystem?

[15 marks]

4. Provide the technical details of water quality management that makes water safe for all purposes including irrigation.

5. Discuss nutrient deficiency diagnosis and correction in land management.

6. (a) How do salinity and acidity problems occur in soils? **[10 marks]**

(b) Provide brief statements on methods used to correct acid and saline soils.**[15 marks]**

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

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SUPPLEMENTARY EXAMINATION

SOIL CHEMISTRY AND FERTILITY: EFW 4204

July 2014 **Time Allowed: 3 HOURS** **Total Marks: 100**

INSTRUCTIONS TO CANDIDATES:
Answer **QUESTION ONE** and any other **THREE**. Each question carries **25 marks.**

1. Discuss the effects of tillage and traffic on soil physical characteristics.

2. Describe primary and secondary minerals in soil.

3. A healthy soil considered to be living. Discuss.

4. Compare and contrast mineral and organic fertilisers in providing long term soil fertility management in Africa.

5. Discuss soil pollution and remediation of affected soils.

6. Describe the nature of irrigable soils and discuss soil problems emanating from irrigation.

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