**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY**

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

**RANGELAND ECOLOGY & MANAGEMENT: EFW 4104**

**January 2013**          **Time Allowed: 3 Hours**          **Total Marks: 100**

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

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1. (a) Discuss at least **two** hypotheses that have been advanced to explain bush encroachment in arid and semi-arid savanna ecosystems.          **[15 marks]**

   (b) Suggest measures you would implement to control bush encroachment in a semi-arid savanna ecosystem.          **[10 marks]**

2.  Discuss the use of equilibrium and non-equilibrium models in vegetation dynamics.

3. (a) Outline the major drivers of rangeland degradation in a semi-arid savanna ecosystem.          **[15 marks]**

   (b) Explain how you would restore a degraded semi-arid savanna ecosystem.   **[10 marks]**

4. Discuss plant-herbivore interactions in woody plants in semi-arid savanna.

5. (a) With **named** examples of ungulate species, discuss the concept of grazing succession.          **[15 marks]**

   (b) Suggest ways in which the establishment of transfrontier parks will improve the utilisation of grazing resources.          **[10 marks]**

6. Discuss the role of elephants as 'ecological engineers' in savanna ecosystems.

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