KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2010/2011

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE (CROP IMPROVEMENT AND PROTECTION)

KST 304: WEED SCIENCE AND MANAGEMENT

DATE: Thursday, 31st March, 2011 TIME: 2.00 p.m. – 4.00 p.m.

INSTRUCTIONS:

Answer **ALL** questions in Section A and any **TWO** (**2**) questions in Section B.

SECTION A (40 MARKS)

1. a) Define the term **weed** (1 mark)

   b) Outline four (4) economic importance of weeds (4 marks)

2. "The spread of weeds would have been less dramatic were it not for man". Give your opinion in support of the statement. (5 marks)

3. Discuss the role of seed dormancy in weed conquest of cropland (5 marks)

4. Explain how germination of *Atriplex dimorphostegia* weed is regulated (5 marks)

5. Outline five (5) practices that result in shift in weed species dominance in farm agroecology. (5 marks)

6. a) Define the term **heteroblasty** and explain how it leads to weed

competitive advantage over crop plants. (3 marks)

b) Explain why the trait in (**a**) above is not desirable in crop production (2 marks)

7. Enumerate the principles that need to be observed in selection of biotic agents in weed control. (5 marks)

8. A farmer observed an upsurge of a certain weed species when Maize, Sorghum and Napier grass followed one another in a rotation. The weed population drastically reduced when beans and cowpeas were included in the rotation.

a) Suggest the weed in question and indicate its mechanism of infestation. (2 marks)

b) Explain the effect of phosphorus nutrition on the severity of the weed infestation. (3 marks)

9. Discuss the cultural methods of arable weed control. (15 marks)

10. Discuss plant pathogens as a means of weed control, pointing out constraints and success case studies. (15 marks)

11. Discuss "Herbicide persistence and residual effects in soil" with emphasis on hazards posed and mitigation strategies. (15 marks)

12. a) Vegetables growing under a tree were observed to wither a few days after germination. It was hypothesized that the withering was due to

i) stress caused by the tree's high water demand and

ii) allelopathic effect.

Suggest two bioassays to test the above hypotheses (8 marks)

b) Give a brief account of **critical weed-free period**. (7 marks)