



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2010/2011
SECOND SEMESTER EXAMINATION FOR THE DEGREE OF
MASTER OF SCIENCE IN ISFM
KRM 506: AGROMETEOROLOGY

DATE: Wednesday, 30th March 2011

TIME: 9.00 a.m. – 12 noon

INSTRUCTIONS

Answer Question **ONE** and any **other THREE** Questions

1.
 - (a) Rainfall is one of the weather elements that determine crop performance. What are the rainfall characteristics that can result in either successor crop failure? **[5 marks]**
 - (b) Rainfall is one of the weather elements that determine crop performance. What are the rainfall characteristics that can result in either successor crop failure? **[5 marks]**
 - (c) Briefly describe the likely benefits of carbon sequestration to a rural community practicing agroforestry. **[5 marks]**
 - (d) Using the matrix potential, explain how soil water is released from three soil types. **[5 marks]**
 - (e) Explain how ETo can be estimated using pan evaporation method and modified penman equation for crop water requirements. **[5 marks]**
2.
 - (a) By use of appropriate examples, explain how soil water balance is determined. **[11 marks]**

(b) Briefly show how water use efficiency can be derived from (2a) above.

[4 marks]

3. (a) Explain how solar radiation is partitioned into various components showing how this can be used to determine light use efficiency. **[10 marks]**

(b) Explain the factors that affect light use efficiency in C4 and C3 plants **[5 marks]**

4. Discuss how human activities in agricultural production in particular and other activities in general are impacting on climate change. **[15 marks]**

5. (a) Discuss how climate/crop simulation modeling has been applied to product the future trends in crop and animal production expected in twenty first century. **[10 marks]**

(b) Briefly explain the challenges developing world is facing in tackling global warming. **[5 marks]**

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