

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF

AGEN 353: IRRIGATION AND DRAINAGE

STREAMS:

TIME: 2 HOURS

DAY/DATE: MONDAY 13/04/2015

11.30 AM – 1.30PM

INSTRUCTIONS:

Answer All Questions in Section One and any other Two Questions in Section Two

Section One

1. Explain the term irrigation [2 marks]
2. Explain four factors that influence the choice of an irrigation method [12 marks]
3. Explain land drainage [2 marks]
4. Explain drainage ditches [4 marks]
5. (a) By use of a diagram explain how mole drain machine can be used to construct drains. [5 marks]
(b) Explain four causes of salt accumulation in irrigation water. [5 marks]

Section Two

6. (a) Explain four factors that influence consumptive use of crops [10 marks]
(b) By use of a diagram explain how you can directly measure the plant consumptive use by use of a lysimeter. [5 marks]
(c) Compute the consumptive use for maize for the month of September. The maize is grown in a field located at latitude 41.5 N and for this location. Mean monthly temperature is 23.9°C. the average percentage of the day time hour of the year for September is 10.32. The crop coefficient is 0.6. [5 marks]

7. (a) By use of a diagram explain how infiltration rate can be obtained in a rice field by use of a double ring infiltrometers. [10 marks]
- (b) Define the term field capacity and explain how it is obtained in the field. [10 marks]
8. Discuss in details four methods of irrigation systems [20 marks]
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