



UNIVERSITY OF EMBU

2019/ 2020 ACADEMIC YEAR

SECOND SEMESTER EXAMINATIONS

FIRST YEAR EXAMINATION FOR THE DEGREE OF MASTER OF SCIENCE IN

LAND AND WATER MANAGEMENT

ALM 601: SOIL PLANT WATER RELATIONS

DATE: OCTOBER 21, 2020

TIME: 2.00 – 5.00PM

INSTRUCTIONS:

Answer ANY FOUR Questions.

QUESTION ONE (25 MARKS)

- a) Describe **two** mechanisms of water absorption in plants. (10 marks).
- b) A Khat farmer in Mbeere, Embu would like a water management system for his farm. Advise him on the possible options. (15 marks)

QUESTION TWO (25 MARKS)

- a) Discuss the effects of drought stress in plants. (15 marks).
- b) Discuss the relationship between evapotranspiration and precipitation in drylands. (10 marks).

QUESTION THREE (25 MARKS)

- a) Describe the procedure of determining the soil moisture content of the University of Embu farm. (10 marks).
- b) Evaluate the use of mulch to regulate soil temperature in Ishiara, Embu. (15 marks).

QUESTION FOUR (25 MARKS)

- a) Criticique the root pressure theory of water transport in plants. (10 marks).
- b) Discuss the environmental factors that affect the rate of transpiration. (10 marks).

QUESTION FIVE (25 MARKS)

The government of Embu constructed irrigation schemes for small scale resource poor farmers. Evaluate the benefits and challenges of this project for water management.

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