



UNIVERSITY OF EMBU

2021/2022 ACADEMIC YEAR

FIRST SEMESTER EXAMINATIONS

FIRST YEAR EXAMINATION FOR THE MASTER OF SCIENCE DEGREE IN AGRICULTURAL
RESOURCES MANAGEMENT

ART 603 – ENVIRONMENTAL MANAGEMENT AND POST HARVEST TECHNOLOGY

DATE: DECEMBER 16, 2021

TIME:2:00PM-5:00PM

INSTRUCTIONS:

Answer Any TWO Questions from section A and another two Questions from section B.

Section A

QUESTION ONE (25 MARKS)

- a) Assess the negative impacts of intensive farming systems on soil, water and air. 15 marks)
- b) Discuss the effects of practising either conservation tillage or conventional tillage, and also discuss the effect of combining either of these tillage practices with inter cropping, on soil properties and by extension soil erosion from water catchments? (10marks)

QUESTION TWO (25 MARKS)

- a) Discuss the following terms as applied in issues to do with the management of the environment; Greenhouse gases, carbon dioxide equivalent, carbon footprint, life cycle analysis, and sequestration. (25 marks)

QUESTION THREE (25 MARKS)

Discuss the contribution of the following to the deterioration of the environment.

- a) world population growth,
- b) urbanization,
- c) industrialization,
- d) mechanized farming and
- e) overstocking of grazing land

SECTION B

QUESTION FOUR (25 MARKS)

- a) Discuss the different **acquired qualities** of dry grain and their importance in the food processing industry. (25 marks)

QUESTION FIVE (25 MARKS)

In the following publication “ZAPOTOCZNY, P. and M. MARKOWSKI, 2014. Influence of hypobaric storage on the quality of greenhouse cucumbers, Bulg. J. Agric. Sci., 20: 1406-1412” the authors present their research work on the postharvest life of greenhouse cucumber.

- a) Discuss the possibility of using ultrasonic methods in order to determine the quality of cucumbers. (6 marks)
- b) Explain the principles of hypobaric storage as used in this study and how it affected storability in this study. (12 marks)
- c) Discuss the synergy of hypobaric and temperature as it affected cucumbers (8 marks)