

P515/2  
PRINCIPLES  
AND PRACTICES  
OF AGRICULTURE  
PAPER 2  
July/August 2023  
3 hours



WAKISSHA JOINT MOCK EXAMINATIONS

Uganda Advanced Certificate of Education

PRINCIPLES AND PRACTICES OF AGRICULTURE

Paper 2

3 hours

INSTRUCTIONS TO CANDIDATES:

- *This paper consists of sections A, B, C, D and E.*
- *Answer Question 1 in section A and four other questions selecting one question from each of the sections B, C, D and E.*
- *Any additional question(s) answered will not be marked.*

## SECTION A

### COMPULSORY QUESTION (20 MARKS)

1. An experiment was carried out to investigate the rate of photosynthesis in a maize plant ( $C_4$  plant) and bean plant ( $C_3$  plant). The rate of photosynthesis of the two crops was determined at different concentrations of  $CO_2$  by measuring the rate of Oxygen evolution from the crops which was recorded in the table below;

CO <sub>2</sub> concentration %	Rate of photosynthesis per leaf area per second (O <sub>2</sub> evolved in cm <sup>3</sup> )	
	Maize	Bean
0.01	17.0	0.0
0.02	38.0	0.0
0.03	55.0	1.5
0.04	51.0	23.0
0.06	51.0	56.5
0.08	51.0	65.0

- (a) Compare the variation in the rate of photosynthesis of the crops at the following carbon dioxide concentrations. (02marks)  
(i) 0.01 to 0.02  
(ii) 0.04 to 0.08
- (b) Give the possible explanations for your answer in (a) above. (02marks)
- (c) Suggest two factors that were kept constant and give a reason why they were kept constant. (02marks)
- (d) Measuring the rate of photosynthesis by determining the rate of oxygen evolved may be an inaccurate method and may give misleading results. Give two reasons why. (02marks)
- (e) What conclusion can be drawn from the photosynthetic rates of the two crops basing on the results above. (04marks)
- (f) Give four differences between  $C_4$  and  $C_3$  plants (08marks)

## SECTION B

### CROP PRODUCTION (20 MARKS)

2. (a) Describe the procedure of growing mushroom from the planting of spawn up to harvesting. (12 marks)  
(b) Explain the challenges faced by farmers growing mushrooms in Uganda. (08 marks)
3. (a) State the impact of soil erosion on farming communities. (08marks)  
(b) Outline the measures to minimise soil erosion and its effects. (12marks)



## SECTION C

### ANIMAL PRODUCTION (20 MARKS)

4. (a) Explain the factors that predispose farm animals to ill health. (10 marks)  
(b) Give the benefits of having a good parasite and disease control program on a farm. (10 marks)
5. (a) Describe the intensive systems of poultry farming under urban farming. (12 marks)  
(b) Suggest the management practices for production of good quality eggs. (08 marks)

## SECTION D

### AGRICULTURAL ENGINEERING AND FARM STRUCTURES (20 MARKS)

6. (a) Describe the factors that affect working efficiency of farm implements. (08 marks)  
(b) Give reasons why there is a need to care for farm implements. (06 marks)  
(c) How can farmers be encouraged to adopt machinery use in farming? (06 marks)
7. (a) Explain why water is of great importance on a farm. (12 marks)  
(b) Explain ways how farmers can fight water shortage on a farm (08 marks)

## SECTION E

### AGRICULTURAL ECONOMICS (20 MARKS)

8. (a) Differentiate between specialization and diversification in farming. (02 marks)  
(b) Describe four farming practices that clearly demonstrate diversification in farming. (08 marks)  
(c) Explain the benefits of diversification in farming. (10 marks)
9. (a) Explain five ways in which Ugandan government has reformed its land. (10 marks)  
(b) Explain reasons why it is necessary for the government to undertake land reforms in Uganda. (10 marks)

END