

P515/2
AGRICULTURE
PAPER 2
July / August
3 Hours



ELITE EXAMINATION BUREAU MOCK 2019

Uganda Advanced Certificate of Education

PRINCIPLES AND PRACTICES OF AGRICULTURE

THEORY

Paper 2

3 Hours

INSTRUCTIONS TO CANDIDATES

- Answer **question 1** in **section A** and **four** other questions, selecting **at least one** from each of the **section's B, C, D and E**.
- Answers **must** be written in the answer booklets provided.
- Any extra number(s) will **not** be marked.

For examiners use only		
Section	Total scores	EXAMINERS' INITIALS
A No. 1		
B No.		
C No.		
D No.		
E No.		
Total		

Turn Over

SECTION A: (20 MARKS)
Question 1 is compulsory.

1. a) (i) Define hypogeal germination. (1 marks)
(ii) List the factors necessary for germination. (1½ marks)
- b). It is a common practice to soak seeds in water before planting. Suggest three reasons why soaking seeds in water before planting may stimulate them to germinate more rapidly. (3 marks)
- (c) The table below indicates the effect of soaking Cowpea seeds for different periods on the % germination and the subsequent dry mass of the roots, shoots and cotyledons. The dry mass measurements were made 14 days after the period of soaking.

Soaking time/days	1	2	3	4
% germination	99	98	75	66
Dry mass (mg seedling – 1)				
Root	19.9	14.5	12.0	12.3
Shoot	25.0	21.7	16.6	13.7
Cotyledons	58.8	70.3	91.6	119.0

- (i) Plot a suitable graph to represent the data in table above. (08 marks)
- (ii) What is the effect of prolonged soaking on;
 - Seeds and their ability to germinate (02 marks)
 - Development of seedlings (02 marks)
- (iii) Suggest a possible explanation for the above effect. (02½ marks)

SECTION B (20MARKS)
CROP PRODUCTION
Answer one question from this section

2. (a) What is germination efficiency? (02marks)
- (b). Explain the factors that affect germination efficiency. (7½ marks)
- (c). Describe one chemical method of testing for seed viability. (11½ marks)

3. (a) Explain how organic matter affects soil fertility. (06 marks)
- (b) What practices can be done to increase soil aggregation? (04 marks)
- (c) Explain the factors that influence symbiotic nitrogen fixation? (10 marks)

SECTION C: (20 MARKS)

ANIMAL PRODUCTION

Answer one question from this section

4. (a) Describe how you would prepare a brooder house to receive one day old chicks. (12 marks)
- (b) Explain the factors considered when planning vaccination of birds. (08 marks)
5. (a) Explain the factors that reduce the quality of meat. (10 marks)
- b) Describe the factors that cause loss of quality of hides and skins.
 - i). When the animal is still alive. (05 marks)
 - ii). During slaughter (05 marks)

SECTION D: (20 MARKS)

AGRICULTURAL ENGINEERING

Answer one question from this section

6. (a) Outline the role of farm structures in agricultural production. (12marks)
- (b) With the aid of a labelled diagram, describe the structure of a typical modern farm building. (08marks)
7. (a) State factors that influence the choice of power to use on a farm. (03 marks)
- (b). Explain the factors that influence power output in draught animals. (12 marks)
- (c). State the characteristics of an animal suitable for work. (05 marks)

SECTION E (20 MARKS)
AGRICULTURAL ECONOMICS

8. (a) Suggest reasons for resettlement of populations in Uganda. (10 marks)
(b) Explain factors to be considered when planning a settlement scheme (10 marks)
9. (a) What is meant by **production function**? (2 marks)
b) The table below shows production of millet at various levels of NPK fertilizer applied.

Fixed factor of land(1 ha)	Variable input (NPK in kgs)	Total yield (Millet in 90 Kg bags)	Marginal product (millet in 90 bags)	Average product (Millet in 90 bags)
1	30	10	10	10
1	60	27		
1	90	42		
1	120	56		
1	150	63		
1	180	65		
1	210	65		
1	240	60		
1	270	52		

- i). Copy and complete the table above by calculating the marginal product and average product. (8 marks)
- ii) Use a graph paper and draw the total physical production, average physical production and marginal physical production curves and on the graph indicate:
the levels of production (07½ marks)
- c) State the law being illustrated by the curves drawn on the graph. (01 mark)
- d) Mention three types of production function common in farming business. (1 ½ mark)

END