

Name:.....Centre/IndexNo.....

School:.....Signature.....

**P515/1
PRINCIPLES
AND PRACTICES
OF AGRICULTURE**

PAPER 1

July/August

2 ½ hours



WAKISSHA JOINT MOCK EXAMINATIONS

Uganda Advanced Certificate of Education

PRINCIPLES AND PRACTICES OF AGRICULTURE

PAPER 1

2 hours 30 minutes

INSTRUCTIONS TO CANDIDATES:

- This paper consist of sections A and B
- Answer all questions in both sections.
- All answers should be written on this question paper.

FOR EXAMINER'S USE ONLY		
Question	Marks	Examiner's No./Initials
Section A		
31		
32		
33		
34		
35		
36		
37		
TOTAL		

SECTION A (30MARKS)

Write the letter corresponding to the most correct answer in the box on the right hand side for each question.

1. Which one of the nutrients below becomes less available to crops at low pH?
A. Potassium.
B. Manganese.
C. Iron.
D. Phosphorous. ☐
2. One of the following describes the anti-rickets triangle;
A. Ca, P and Vit. D are required in equal amounts.
B. Ca, P and Vit D are required to prevent rickets.
C. Ca, P and Vit. D are used in the treatment of rickets.
D. Any of Ca, P or Vit D can be used to prevent rickets. ☐
3. Which one of the following is true about the use of a mould board? It is;
A. affected by vegetation cover of an area.
B. not affected by soil moisture content.
C. suitable for certain types of crops to be grown.
D. not affected by soil types. ☐
4. Crops and livestock using limited land is an example of;
A. supplementary products.
B. complementary products.
C. competitive products.
D. joint products. ☐
5. Which of the following influences the storage life of milk?
A. Health of the milker.
B. Condition of storage.
C. Age of the milking cow.
D. Cow treatment after milking. ☐
6. A machine with an efficiency of 75% is used to lift a load of 600N by applying an effort of 40N. Calculate its velocity ratio.
A. 60
B. 15
C. 30
D. 20 ☐
7. There is a limited biomass at each trophic level in a food chain because at each level, there is progressive,
A. reduction in numbers of organisms.
B. loss of energy.
C. reduction in size of organisms.
D. reduction in amount of food. ☐
8. The farming system characterized by growing of short term crops under intensive management is;
A. Urban farming.
B. Arable farming.
C. Market gardening.
D. Mixed cropping. ☐

9. During the Calvin cycle, glycerol is formed from
- Phosphoglyceraldehyde.
 - Phosphoglyceric Acid.
 - Pyruvic acid.
 - Ribulose biphosphate.

☐

10. Which of the following is an adaptation of indigenous breeds of cattle to live in tropics?
- Strong legs to walk long distances.
 - Hump to store fat.
 - Thin coat with many sweat glands.
 - Big body to store food.

☐

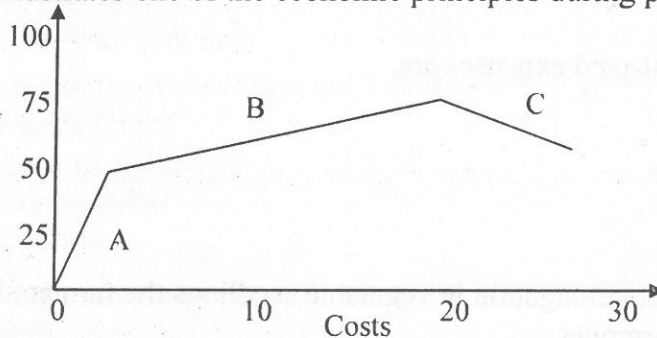
11. Plant materials are composited prior to application in order to;
- ease their application.
 - reduce the c: n ratio.
 - obtain a dark colour.
 - reduce moisture content.

☐

12. Which one of the following chemical substances can serve as a selective weed killer?
- Auxins.
 - Cytokinins.
 - Abscissic acid.
 - Ethene.

☐

13. Fig.1 Illustrates one of the economic principles during production,



Which of the following principles is being illustrated by section B?

- Principle of economies of scale.
- Principle of equi-marginal returns.
- Principle of diminishing returns.
- Principle of opportunity cost.

☐

14. Which of the following is the most important determinant of efficiency of land resources?
- Improved technology.
 - Good management.
 - Security of land tenure.
 - Availability of capital to invest.

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15. The purpose of root pruning in the management of agro-forestry trees is to;
- reduce nutrient uptake.
 - reduce on the number of leaves formed.
 - prevent lateral extension of roots and reduce competition with other
 - allow the plant's to get nutrients from deeper layers of the soil.

☐

24. A farmer has 2 hectares of land and at the end of the year he had his variable costs amounting to 450,000/=. If he sold items worth Shs. 650,000/=. what was his gross margin assuming he paid rent worth 50,000/= in the same year?
- A. 100,000/= ☐
- B. 75,000/=
- C. 200,000/=
- D. 150,000/=
25. A soil sample was analyzed and it was found to have a volume of 80gm with a mass of 78gm, what was the % air by volume in the sample.
- A. 72% ☐
- B. 0.975%
- C. 2.5%
- D. 80%
26. Which of the following chemical reactions in weathering results in rock decomposition?
- A. Hydrolysis. ☐
- B. Reduction.
- C. Solution.
- D. Hydration.
27. Which one of the following practices ensures that seedlings get adapted to field conditions after transplanting?
- A. Hardening Off. ☐
- B. Pricking Out.
- C. Shedding.
- D. Thinning.
28. Which one of the following is not a component of environment stress?
- A. Lack of light. ☐
- B. Lack of shelter.
- C. Topography.
- D. Disease.
29. Which one of the following influences the effectiveness of a pre-emergence herbicide?
- A. Degree of wetting of leaves. ☐
- B. Type of crop grown.
- C. Stage of crop growth.
- D. Degree of wetting of the soil.
30. Which one of the following processes is the normal sequence of protein synthesis?
1. Synthesis of amino acids
 2. Activation of amino acids
 3. Transcription
 4. Translation
- A. 2, 3, 4 and 1 ☐
- B. 1, 2, 3 and 4
- C. 2, 3, 1 and 4
- D. 3, 2, 4 and 1

Turn Over

SECTION B (70 MARKS)

Write your answers in the spaces provided.

31. (a) Define the term hormone. (02marks)

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- (b) The table below shows hormones involved in the oestrous cycle of a cow. Study the table and then fill in the missing information. (04marks)

Site of production	Hormone Secreted	Effect of the hormone on the cycle
Uterus		
		Development of follicles
Corpus luteum		
		Ovulation

- (c) Using knowledge of the oestrous cycle, show how these hormones regulate the oestrous cycle in a cow. (02marks)

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- (d) Outline **four** signs exhibited by a cow at standing heat. (02marks)

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32. (a) Explain the following as used in the nutrition of farm animals.

- (i) Feed additives. (01mark)

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(ii) Biological value. (01mark)

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(iii) Production from grass alone. (01mark)

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(b) Mention any **three** advantages of feeding livestock on roughages. (03marks)

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(c) Give **four** advantages cattle have over pigs as far as digestion is concerned. (04marks)

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33. (a) Differentiate between increasing returns and diminishing returns in a production function. (02marks)

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(b) Outline **four** factors that influence the level of capital investment in a farm business. (04marks)

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Turn Over

- (c) Identify **four** short comings in the implementation of the current parish development model in Uganda. (04marks)

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34. (a) Explain **four** ways how timely planting increases crop yields. (04marks)

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- (b) Explain **three** signs exhibited by late planted crops. (03marks)

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- (c) Suggest **three** remedial practices a farmer can undertake to save late planted crops from further deterioration. (03marks)

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35. (a) What is meant by field efficiency of an implement? (01mark)

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- (b) Field efficiency of most implements is not 100%, give **three** reasons why this is so. (03marks)

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- (c) Suggest **three** ways a farmer would increase the field efficiency of farm machinery. (03marks)

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- (d) A 3 x 30cm plough is moving at a speed of 4kmh^{-1} . Calculate how much time it takes to plough a 500mx500m field when the field efficiency is 70%. (03marks)

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36. (a) Outline **two** regulations governing public and livestock health in Uganda. (02marks)

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- (b) Identify **two** relationships existing between public health and animal health act. (02marks)

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- (c) Give **three** reasons in support of the inclusion of public health concerns in livestock management programs. (03 marks)

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Turn Over

- (d) Outline **three** signs of environmental degradation as a result of urban livestock farming. (03marks)

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37. An experiment was set up to investigate the effect of soil pH on the abundance of bacteria and fungi in percentage in a soil sample.

Soil pH	4.0	6.0	7.4	9.5	10.4	12.5	13.4	14.0
Bacteria	20	30	45	50	60	58	50	18
Fungi	60	50	40	30	20	18	15	10

- (a) Describe how the abundance of the two organisms vary with soil pH. (03marks)

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- (b) What **two** conclusions can you draw from the data? (02marks)

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- (c) Give **two** ways how the above micro organisms affect crop growth. (02marks)

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- (d) Explain **three** other factors that may affect the abundance of soil microbes. (03marks)

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END