

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

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

P515/1
PRINCIPLES
AND PRACTICES
OF AGRICULTURE
PAPER 1
2 ½ hours

WAKISSHA

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. 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
2. The rate of seed application of a planter can be increased by
A. adding more seeds in the hopper.
B. reducing the speed of operation.
C. increasing the size of the seed cells.
D. increasing its speed of operation.
3. Death of growing points in a crop is usually deficiency symptoms of
A. Potassium.
B. Nitrogen.
C. Phosphorus.
D. Magnesium.
4. Which one of the following is the most effective method of draining a flooded land?
A. Surface draining
B. Sub-surface
C. Arterial draining
D. Use of rubble
5. The measure of monetary output per unit of input on the farm can be best described as
A. profitability.
B. rate of money turn over.
C. economical efficiency.
D. technical efficiency.
6. Which of the following will increase efficiency of feed utilization in livestock?
A. Feeding animals regularly.
B. Giving animals appropriate feeds.
C. Giving animals supplementary feeds.
D. Giving animals extra feeds.
7. In order to increase nodulation in a legume pasture the farmer should:-
A. add rooting hormones.
B. add organic matter.
C. carry out inoculation.
D. apply nitrogen fertilizers.

8. Which pair of food stuff provides energy during starvation?
A. Carbohydrates and Protein
B. Carbohydrates and Lipids
C. Lipid and Proteins
D. Carbohydrates and Vitamins ☐
9. A farmer noted that his birds produced loose droppings with a whitish and greenish colour. Which of these treatments would you recommend?
A. Inject with multi-vitamin.
B. Provide coccidiostats in feeds.
C. Provide oxy-tetracycline powder in drinking water.
D. Provide anti-stress drugs in feeds. ☐
10. Which of the following would easily transmit pathogens to a crop?
A. American bollworm
B. Aphids
C. Weevils
D. Cotton lygus ☐
11. A farmer selected a sow because it reproduced regularly and easily. Which of these criteria was used to select for the above sow?
A. Temperament
B. Productivity
C. Fecundity
D. Adaptability ☐
12. Agricultural marketing can be improved by
A. increasing agricultural output.
B. market diversification.
C. diversifying agricultural production.
D. reducing the costs of production ☐
13. Economies of scale is said to be of an advantage because
A. one pays less per unit of output.
B. reduces the risks of production.
C. increases the level of production.
D. one produces more output. ☐
14. A condition in cattle where the effect of a gene does not fully express its self is said to be;
A. Polygenous.
B. Co-dominant.
C. Sex linked.
D. Recessive. ☐
15. From the following sources of variation which one has the highest chance of producing new species?
A. Crossing over
B. Random fusion of gametes
C. Mutation
D. Independent assortment ☐

16. One advantage of using a disc plough is that it
A. covers trash properly
B. can easily roll over obstacles
C. is light
D. produces a fine tilth. ☐
17. Which one of the following influences the effectiveness of a non – selective contact herbicide?
A. Degree of wetting of leaves.
B. Type of weed being controlled.
C. Stage of growth of the weed.
D. Time of application. ☐
18. Which one of the following pairs of plant and livestock diseases is caused by viruses?
A. Maize streak and foot and mouth diseases.
B. Coffee berry disease and Rinder pest.
C. Cassava mosaic and foot rot.
D. Tomato blight and Anaplasmosis. ☐
19. A property of water which facilitates its efficient transportation of glucose is its.
A. ability to form H-bonds with other molecule.
B. high surface tension.
C. low freezing point.
D. high boiling point. ☐
20. In the life cycle of the blue tick the larva is found on;
A. 2nd host
B. 1st host
C. 3rd host
D. 2nd and 3rd host. ☐
21. In the proximate food analysis ether extract is used to extract
A. water from the feed.
B. proteins from the feed.
C. fat from the feed.
D. fibre from the feed. ☐
22. Which one of the following is a characteristic of a good planter?
A. Specific rate of seed application.
B. Being easy to dismantle and clean.
C. Having a high application rate.
D. Being of strong and heavy parts. ☐
23. Which of the following is a limitation of using a hand sprayer in tick control on a large farm?
A. Ignorance of farmers.
B. Blockage of nozzles.
C. The animals' bodies may not be well covered by the acaricide.
D. There is a lot of wastage of the acaricide. ☐

24. Which of the following pH would encourage flocculation in soils?
 A. 2
 B. 12
 C. 7
 D. 4
25. Which one of the following pairs of reactants is not required for the light independent reactions of photosynthesis?
 A. NADPH and ATP
 B. ATP and Carotenoids
 C. RUBP and free O₂
 D. CO₂ and enzymes
26. Which of the following farm machines illustrates a second class lever?
 A. Tractor jack
 B. Secateur
 C. Claw hammer
 D. Wheel burrow
27. Which one of the following sets of tools is used for the same purpose?
 A. Hot Iron, caustic stick, wire saw.
 B. Hot Iron, caustic stick, pincers.
 C. Hot Iron, wire saw, pincers.
 D. Caustic stick, wire saw, pincers.
28. Which is the order of the stages of the soil forming processes?
 A. Translocation-decomposition-disintegration.
 B. Disintegration-decomposition-translocation.
 C. Decomposition-translocation-disintegration.
 D. Decomposition-translocation-disintegration.
29. The biggest advantage with differed grazing is that it
 A. may limit animal usage of pastures.
 B. encourage accumulation of wastes in pasture.
 C. control pasture weeds.
 D. decrease tick population in a pasture.
30. Under perfect market situations, profits are maximized when
 A. total revenue is equal to total costs.
 B. average costs are equal to average revenue.
 C. marginal costs are equal to marginal revenue.
 D. total costs are greater than total revenue.

SECTION B (70 MARKS)

Write your answers in the spaces provided.

31. (a) Explain **five** advantages of using organic inputs in farming (05marks)

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Turn Over
5

- (b) Describe **five** farming practices that demonstrate agricultural sustainability (05marks)

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32. (a) Explain the need for regular servicing of farm machinery (05marks)

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- (b) What are the possible causes of low field efficiency of farm machinery? (05marks)

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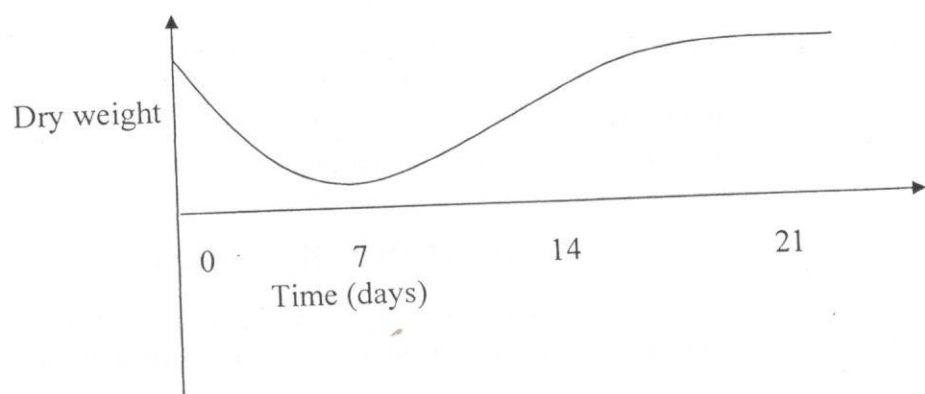
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33. The **fig. 2** below shows the changes in dry weight of a germinating maize seed.



- (a) Explain the changes (02marks)
- (i) In the first seven days

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(ii) Between the seventh and twenty first day (02marks)

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(b) Explain **three** factors that limit germination efficiency in seeds (06marks)

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34. (a) Outline **five** roles of the Ministry of Agriculture Animal Industries and Fisheries, (MAAIF) in the implementation of agriculture policies. (05marks)

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(b) Suggest what the government can do, to encourage disadvantaged farmers effectively participate in agricultural production. (05marks)

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35. The table below shows the effects of plant density on yields of grain for two maize varieties planted at the same time and on the same soil conditions. Study it and answer the questions that follow.

Plant density (plants ha ⁻¹)	Yield (kg ha ⁻¹)	
	Variety A	Variety B
3000	2500	2200
4500	3000	4000
6000	4500	3500
8000	3800	3000
Total	13,800	12,700

Turn Over

- (a) Explain the variation in yield of the maize varieties above with planting density. (03marks)

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- (b) Apart from yield, explain **two** other growth attributes of maize that can be affected by planting density. (02 marks)

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- (c) Basing on the data above, which variety would you recommend to a farmer with limited land? (02 marks)

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- (d) Explain how genetic factors could have influenced the difference in the performance of the two varieties. (03 marks)

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36. (a) Explain the meaning of the following methods of selection used in Livestock breeding.

- (i) Individual selection (02 marks)

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- (ii) Family selection (02 marks)

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- (iii) Progeny testing (02 marks)

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- (b) What characteristics would you look for when selecting poultry for commercial egg production? (04 marks)

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37. (a) Differentiate between *fertilizer grade* and *fertilizer ratio*. (02 marks)

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- (b) Explain **two** factors that may reduce fertilizer uptake by crops. (02 marks)

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- (c) A farmer applied 600kg of **NPK** fertilizer per hectare in a maize crop field which contained the elements in the ratio 35:15:10 respectively

- (i) Calculate the amount of each nutrient that the farmer applied per hectare. (03 marks)

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- (ii) Determine the percentage of each element in the fertilizer. (03 marks)

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END