

Name:..... Centre/Index No.
School:..... Signature

P515/1
**PRINCIPLES
AND PRACTICES
OF AGRICULTURE**
PAPER 1
July/August 2024
2 $\frac{1}{2}$ 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 (30 marks)

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 following soils require prompt lime application for good crop productions?

- A. Saline soil.
- B. Soils with pH7.
- C. Soils with lower pH.
- D. Soil with a lot of aluminum ions.

2. Which of the following government programmes least affect agricultural development in Uganda?

- A. Unlimited industrialization.
- B. Plan for modernization of agriculture.
- C. Liberation of the economy.
- D. Pluralism in government.

3. If napier grass is consumed by an animal at the rate of 3.6% body weight per day, compute the amount of pasture consumed for 30 days by an animal whose body weight is 850 kgs.

- A. 850 Kgs
- B. 918 Kgs
- C. 950 Kgs
- D. 1125 Kgs

4. When carrying out artificial insemination, thawing of semen is intended to

- A. Cool semen.
- B. Dilute semen.
- C. Activate semen.
- D. Preserve semen.

5. Why is it necessary to leave some honey in the bee hive when harvesting honey?

- A. To allow bee eggs to hatch.
- B. Stimulate bees to collect more honey.
- C. Prevent bees from starving.
- D. Prevent bees from swarming.

6. What do you understand by the term "Algae bloom" as used in fish farming?

- A. Production of Carbon dioxide by algea.
- B. Use of oxygen by algea.
- C. Removal of algea from ponds.
- D. Rapid growth of Algea in ponds.

7. Which one of the following plant elements will lead to purple, orange patches in leaf margins in crops when deficient in soil.

- A. Magnesium
- B. Phosphorus
- C. Calcium
- D. Sulphur

8. What causes increased branching in plants when the terminal bud is removed?

- A. Exposure of lower parts to sunlight.
- B. Increased rate of photosynthesis.
- C. Increased level of auxins.
- D. Increased effects of giberelliens.

9. Which one of the following is the reason for feeding livestock on bulky feeds?
- A. They contain a lot of energy.
 - B. They are largely digestible.
 - C. They are largely consumed.
 - D. They contain a lot of proteins.
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10. What is the major advantage of asexual reproduction in crop breeding?
- A. Increase in hybrid vigour.
 - B. Increase in heterozygosity.
 - C. Maintenance of constant gene number.
 - D. Production of high yielding plant.
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11. Which one of the following is not a determinant of elasticity of demand?
- A. Price of a commodity
 - B. Time taken to produce a commodity.
 - C. Uses to which a commodity is.
 - D. Necessity of the commodity.
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12. The factor that is least considered when deciding on fertilizers to use on a crop is
- A. rainfall intensity.
 - B. type of soil.
 - C. type of crop.
 - D. stage of crop growth.
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13. The conversion of nitrites to nitrates by the microbial bacteria, can be described as
- A. mineralization
 - B. immobilization
 - C. nitrification
 - D. denitrification
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14. The setts of sugarcane are treated in hot water before planting in order to
- A. Control smuts.
 - B. Increasing viability.
 - C. Controlling viral diseases.
 - D. Re-activate cane enzymes.
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15. Which pair of food stuff provides energy during starvation?
- A. Carbohydrates and proteins.
 - B. Carbohydrates and lipids.
 - C. Lipids ad proteins.
 - D. Carbohydrates and vitamins.
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16. 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.
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17. Which of the following nitrogenous fertilizer is only applied at a time of planting.
- A. N.P.K
 - B. Urea
 - C. Sulphate of ammonia
 - D. D.A.P
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18. A condition in cattle where the effects of a gene doesn't express it's self is said to be
A. polygenous.
B. co-dominant.
C. sex-linked.
D. recessive gene.
19. 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.
20. A machine with efficiency of 75% is used to lift a load of 600 N by applying an effort of 40 N. Calculate the velocity ratio of the machine.
A. 60
B. 15
C. 30
D. 20
21. Which one of the following current assets on a farm business can be termed as liquid?
A. Buildings
B. Land
C. Maize
D. Tractor
22. Which of the following fertilizers will cause an increase in soil pH.?
A. Sulphate of ammonia.
B. Lime.
C. S.S.P (Single Super Phosphate).
D. D.S.P (Double Super Phosphate).
23. During carpentry work, which of the following tools can be used to holds gadgets together
A. marking gauge.
B. chisel.
C. G-clamp.
D. wood mallet.
24. The plants lose water from their leaves by the help of
A. turgor pressure.
B. transpiration pull.
C. active transport.
D. osmosis.
25. Which of the following enzymes is formed in the rumen of ruminants?
A. Cellulase
B. Pepsin
C. Amylase
D. Trypsin
26. The region II of the production functions ends when
A. marginal product is maximum.
B. total physical product is zero.
C. marginal product is zero.
D. marginal product is negative.

27. The pressure that tends to force water out of a plant cell is
A. Osmotic potential.
B. Turgor pressure.
C. Water potential.
D. Pressure potential.
28. The axle of a 4-wheel drive tractor has 120 teeth while that of the propeller shaft that drives it has 20 teeth. What is the velocity ratio of the wheel?
A. 4
B. 8
C. 2
D. 6
29. Which one of the following tissues offers mechanical support in plants?
A. Schlerenchyma cells.
B. Palisade cells.
C. Mesophyll cells.
D. Glandular cells.
30. In cattle, desirable traits from a bull can be spread fast by
A. natural mating.
B. grading up.
C. cross breeding.
D. multiple ovulation.

SECTION B (70 marks)

Write your answers in the spaces provided.

31. (a) Outline the management practice for layers in a deep litter house. (05 marks)

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- (b) Explain the measures that should be taken to ensure production of high quality eggs under free range system. (05 marks)

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32. (a) State and explain characteristics of a good fish species for rearing. (06 marks)

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- (b) Outline the causes of low fish yields from fish ponds. (04 marks)

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33. (a) Explain the factors that make the soil to be more productive. (06 marks)

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(b) Mention the major benefits of the following field practices. (04 marks)

(i) Early cultivation.
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(ii) Row planting
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(iii) Intercropping
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4. (a) Differentiate between the term energy and power as used in simple machines. (02 marks)

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(b) Show how the following machines can be used on the farm? (03 marks)

(i) Wheel and axle
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(ii) Inclined plane.

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(iii) Screws

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(c) A bag of produce weighing 60 N is lifted to a height of 3 meters in 4 seconds.
Calculate.

(i) Work done (05 marks)

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(ii) Power used

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35. (a) Explain the factors that affect the rooting in cuttings during grafting. (05 marks)

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(b) Give reasons for grafting of oranges. (05 marks)

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36. (a) What is meant by farm planning? (02 marks)

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(b) Why is proper farm planning important in modern farm management? (04 marks)

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Turn Over

- (c) Describe the steps that are involved in farm planning process for a mixed farm. (04 marks)

37. (a) The information below shows the assets and liabilities of Mulwana mixed farm as at 31st/Dec/2010.
Debts payable 600,000/=, debts receivable 860,000/=, promissory notes 105,000/= cash at hand 72,000/=, prepaid expenses 890,000/=, Bank over draft 966,000/=, unpaid insurance, 28,500/=, value of a sheep 365,000/=, value of maize 512,000. Buildings 20,000,000, Depreciation 694,000/=, long term loan 8,500,000/=, interest 947,000/. Prepare balance sheet for Mr. Mulwana. (08 marks)

- (b) With a reason, comment on the financial position of Mr. Mulwana's farm. (02marks)

END

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PRINCIPLES
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PAPER 2
July/August 2024
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. 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	4000	3000
6000	4500	3500
8000	3800	3000
Total	14,800	11,700

- (a) Explain the variation in the yield of the maize varieties above with planting density. (06 marks)
- (b) Apart from yield, explain two other agronomic attributes of maize that can be affected by planting density. (04 marks)
- (c) Basing on the data above, which variety would you recommend to a farmer with limited land? (04 marks)
- (d) Explain how genetic factors could have influenced the difference in the performance of the two varieties. (06 marks)

SECTION B

CROP PRODUCTION (20 marks)

2. (a) Highlight the advantages of using the following grazing systems.
- (i) Zero grazing. (08 marks)
 - (ii) Rotational grazing. (08 marks)
- (b) What strategies would you recommend to a farmer in order to maintain his pastures in a high state of productivity? (12 marks)
3. (a) Explain the contributions of the following mineral elements to crop growth.
- (i) Potassium (04 marks)
 - (ii) Phosphorus (04 marks)
 - (iii) Nitrogen (04 marks)
- (b) Describe the procedure you would follow in order to obtain soil samples from a garden field for nutrient analysis. (08 marks)

SECTION C

ANIMAL PRODUCTION (20 marks)

4. (a) Differentiate between water intoxication and water turn over in farm animals. (02 marks)
- (b) Explain the factors that influence water turn over in cattle. (12 marks)
- (c) Outline the importance of water to farm animals. (06 marks)
5. (a) Explain the conditions that can lead to low breeding efficiency in a herd. (14 marks)
- (b) Explain the influence of inbreeding in animal improvement programs. (06 marks)

SECTION D

AGRICULTURAL ENGINEERING AND FARM STRUCTURES (20 marks)

6. (a) Explain the factors that influence the efficiency of field machinery. (08 marks)
- (b) What factors should a farmer consider while purchasing a tractor for farm use? (12 marks)
7. (a) Using examples, explain the economic importance of farm structures. (12 marks)
- (b) Describe the procedure of construction of a foundation for a typical farm building. (08 marks)

SECTION E

AGRICULTURAL ECONOMICS (20 marks)

8. (a) Discuss the factors hindering the success of most agricultural policies and programs. (12 marks)
- (b) Examine the influence of land policy on the performance of the agricultural sector. (08 marks)
9. (a) Explain the strategies you would recommend to farmers in order to increase the rate of consumption for agriculture commodities. (08 marks)
- (b) Using an illustration, describe how the forces of supply and demand influence the equilibrium price. (12 marks)

END

Name:

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**PRINCIPLES
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OF AGRICULTURE
PAPER 3**
July/August 2024
2 hours



WAKISSHA JOINT MOCK EXAMINATIONS

Uganda Advanced Certificate of Education

PRINCIPLES AND PRACTICES OF AGRICULTURE

Paper 3

2 hours

INSTRUCTIONS TO CANDIDATES:

- Answer **all** questions, writing your answers in the spaces provided.

FOR EXAMINERS' USE ONLY		
QUESTION	MARKS	EXAMINER'S No.
1		
2		
3		
4		
5		
TOTAL		

1. (a) You are provided with specimen **A** and **B** which are soil samples. Measure 1 cm^3 of soil sample **A**, Add in 2 cm^3 of water and shake it thoroughly. Leave it to settle for about 3 minutes, place a litmus paper into the test tube and record the results in the table below.
Repeat the above procedure with soil sample **B**. (02 marks)

Specimen	Observation	Deduction
A		
B		

- (b) Explain how the results obtained in each specimen would affect plant growth. (03 marks)

A

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B

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- (c) What could be the possible cause of the results obtained in table (a) above (03 marks)

A

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B

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- (d) Mention **two** possible crops that can be grown on soil specimen A and B basing on your deduction in table (a) above. (02 marks)

A

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B

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2. You are provided with the following specimens which are animal feeds. Observe the specimens and answer the questions below.
- (a) Formulate a diet for laying birds containing 16% crude protein with specimen F having 8.7% C.P and specimen G having 65% C.P (02½ marks)

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- (b) Describe the procedure of hand mixing the specimens H, I, G and F to produce quality feeds. (05 marks)

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- (c) Why should broilers be fed on specimen G when they are within 60 days of age. (02½ marks)

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3. (a) You are provided with the following specimens which are used in livestock production. Observe specimen M and give features which enables it perform its functions. (02 marks)

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(b) Describe how specimen M, N and a bottle of oral drugs can be used together to carry out that management practice. (03 marks)

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(c) With a reason, give two precautions that should be taken while using specimen M. (03 marks)

(i)

(ii)

- (d) Which animal operations can be carried out using specimen N. (02 marks)

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4. (a) You are provided with the following specimens used for construction of farm structures. Describe their appearance. (02½ marks)

U

V

W

X

Y

- (b) Describe the uses of each specimen in building construction. (05 marks)

U

V

W

X

- (c) Describe the procedure of preparing quality specimen **X** for construction of a good beam. (02½ marks)

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5. You are provided with the following specimens **C**, **D** and **E** which are used in crop improvement.

- (a) (i) State the effect of applying each specimen on crops. (02 marks)

C

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D

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E

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- (ii) Comment on the suitability for use of each specimens. (03 marks)

C

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Turn Over

D

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- (b) Suggest how the specimens **C** and **E** can be improved. (03 marks)

C

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E

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- (c) Describe how specimen **D** can be applied in the garden. (02 marks)

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END

Ensure that the candidates are provided with the following specimens:

A = Acidic Soil (Mix sand soil with 0.1M HCl, dry and grind it.)

B = Alkaline soil (Mix clay with 0.1M Sodium hydroxide and grind it.)

F = Maize bran

G = Fish meal

H = Crushed Oyster shell.

I = Vitamin premix.

M = Drenching gun

N = Rope (1 meter long)

U = Cement (spade full)

V = Sand (spade full)

W = Gravel.

X = Concrete

Y = Damp proof course (DPC)

C = Freshly collected poultry manure.

D = Well fermented compost manure

E = Freshy cow dung.

Other requirements.

- Test tubes
- Litmus paper
- Heat source
- Water
- Clean cotton cloth $\frac{1}{2}$ Meters.

END