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P515/1

PRINCIPLES AND  
PRACTICES OF  
AGRICULTURE

Paper 1

AUGUST, 2023

2<sup>1</sup>/<sub>2</sub>hours



**JINJA JOINT EXAMINATIONS BOARD**

*Uganda Advanced Certificate of Education*

**MOCK EXAMINATIONS – AUGUST, 2023**

**PRINCIPLES AND PRACTICES OF AGRICULTURE**

**THEORY**

**Paper 1**

2<sup>1</sup>/<sub>2</sub>hours

**INSTRUCTIONS TO CANDIDATES:**

*Answer ALL questions in this paper.*

**For Examiner's use only**

Question	Mark
SECT. A	
Q. 31	
Q. 32	
Q. 33	
Q. 34	
Q. 35	
Q. 36	
Q. 37	
TOTAL	

**SECTION A (30MARKS)**

**Write the letter corresponding to the correct answer in the box provided**

1. Roughages are essential in animal nutrition because they
  - A. contain plenty of nutrients especially proteins.
  - B. are easily digested by bacteria in the caecum.
  - C. eliminate possibility of constipation.
  - D. stimulate the secretion of bile salts.
  
2. Which one of the following is suitable for loading livestock on a truck?
  - A. Pulley.
  - B. Wheel and axle.
  - C. Lever.
  - D. Inclined plane.
  
3. During propagation in plants, layering is done when
  - A. uniform maturity is required.
  - B. cuttings cannot root easily.
  - C. early maturity is required.
  - D. a large propagate is required.
  
4. The major reason why women have limited access to agricultural credit is that
  - A. most women have limited access to assets.
  - B. most women have more work at home.
  - C. most women are widows.
  - D. most women are illiterate.
  
5. Polyploidy condition in organisms is as a result of
  - A. failure of spindle fibres to develop after metaphase.
  - B. substitution of parts or chromosomes by another part.
  - C. fusion of reproductive cell during fertilization.
  - D. cells receiving extra set of chromosomes.



6. A goat consumed 500g of a concentrate and, 30g was lost through faeces. Which one of the following represents digestibility percentage?
- A. 60%  
B. 94%  
C. 73.3%  
D. 29.4%
7. Farmers are encouraged to pack mushrooms in sealed containers in order to
- A. prevent absorption of moisture.  
B. avoid pest damage.  
C. avoid loss of flavour.  
D. maintain nutrients.
8. The function of a strut on a post and wire fence is to
- A. prevent sagging of wires.  
B. stretch wires to the right tension.  
C. give extra support to strainer post.  
D. maintain straightness of the fence.
9. Micro gardens are established in urban areas in order to
- A. provide feeds for livestock.  
B. generate revenue for government.  
C. avail fresh vegetables to consumers.  
D. generate income for the farmer.
10. Under good a priary management, inspection of the hive should begin...
- A. immediately after a hive is baited.  
B. towards harvesting of honey.  
C. after colonization of the hive.  
D. when bees become aggressive.

☐☐☐☐☐

11. In a single fixed pulley, the load is
- A. twice the effort.
  - B. greater than the effort.
  - C. equal to the effort.
  - D. less than the effort.
12. The advantage of using longstroth bee hive when rearing bees is that
- A. it can easily be inspected for diseases.
  - B. every comb is accessible without removing others.
  - C. it is easy to gather good quality bee wax.
  - D. it is designed with a queen excluder.
13. Maize streak disease is characterized by
- A. Papery lesions on leaves.
  - B. Narrow yellow strips parallel to leaf veins.
  - C. Sooty appearance on the cob.
  - D. Dark brown patches on underside of leaves.
14. Which one of the following is true about zone III of the production function?
- A. Marginal physical product is negative.
  - B. Average product is equal to marginal product.
  - C. Marginal product is at maximum.
  - D. Total product is increasing at a decreasing rate.
15. Rice can grow in a water logged soil because the
- A. Crop requires a lot of water to grow.
  - B. Crop can obtain air through the stem cortex.
  - C. Stem epidermis is water proof.
  - D. Roots can absorb air from the water.





16. Which one of the following is the correct order of hand spraying animals in a crush during control of external parasites?

A. Belly → back → head → brisket → rear.

B. Rear → brisket → belly → head → back.

C. Back → brisket → belly → head → rear.

D. Back → brisket → belly → rear → head.

☐

17. Which one of the following takes place during the light reaction stage of photosynthesis?

A. Hydrogen molecules are trapped to reduce carbon dioxide to glucose.

B. Oxygen diffuses out of the leaf via stomata as a waste product.

C. Carbon dioxide diffuses into the leaf through the stomata.

D. Carbon dioxide is fixed by ribose di-phosphate.

☐

18. Which one of the following parts of animal cell is responsible for eliminating worn out organelles?

A. Cytoplasm.

B. Lysosomes.

C. Nucleolus.

D. Ribosomes.

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19. The major reason for fermenting the substrate for oyster mushroom production is to

A. Increase nutrient availability.

B. Provide a suitable pH for mushroom.

C. Encourage early spouting.

D. Increase resistance of mushrooms to pest attack.

☐

20. The following is a food chain in an aquatic habit.

**Algae → mosquito larvae → small fish → carnivorous → fish → crocodiles**

Which one of the following changes would cause a reduction in the number of mosquito larvae?

- A. Increase in the number of carnivorous fish.
- B. Increase in the number of small fish.
- C. Increase in the number of crocodiles.
- D. Increase in the number of algae.

☐

21. The rumen micro-organisms in animals are classified as;

- A. Primary producers.
- B. Secondary consumers.
- C. Decomposers.
- D. Primary consumers.

☐

22. The advantage of battery cage system of poultry keeping over deep litter system is that;

- A. it eliminates uncontrolled breeding since cages separate birds.
- B. it keeps birds from predators and bad weather.
- C. birds receive adequate food and water while in the cages.
- D. it provides information for individual performance records.

☐

23. Which one of the following conditions may require the use of a spray race instead of a dip tank?

- A. Cases of heavily in-calf animals.
- B. Increased incidences of parasite attack.
- C. Large herds of cattle on the farm.
- D. Labour shortage on the farm.

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24. A hard pan in the soil profile refers to

- A. a layer of rock below the soil surface.
- B. an impermeable layer below the soil surface.
- C. an impermeable layer at the soil surface.
- D. an impermeable layer at the bed rock.

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25. Rough skin, standing hair and a swollen stomach in calves are signs of
- A. worm infestation.
  - B. over feeding.
  - C. infestation by external parasites.
  - D. constipation.
26. Which one of the following damages clearly confirm banana weevil attack on a host plant?
- A. Irregular tunnels in the pseudostem.
  - B. Cracking fruits.
  - C. Presence of dark green streaks on leaves.
  - D. Leaf dwarfing.
27. Diploid condition in cell division is expressed when
- A. four daughter cells are produced forming gametes.
  - B. a germ cell under goes reduction division.
  - C. a somatic cell has its full number of chromosomes.
  - D. a somatic cell divides into two daughter cells.
28. Tissue culture can be used in mass propagation of desired clones because it
- A. requires little labour.
  - B. maintains a disease free environment.
  - C. ensures high rate of multiplication.
  - D. equipments used are readily available.
29. Which one of the following costs are not easily recognized and accounted for in production?
- A. Fixed costs.
  - B. Variable costs.
  - C. Implicit costs.
  - D. Explicit costs.

30. The cation exchange capacity of soil plays a role in;
- A.improving aeration of the soil.
  - B.preventing leaching of nutrients from the soil.
  - C.increasing the rate of organic matter decomposition.
  - D.improving water holding capacity of the soil.

### SECTION B (70 MARKS)

Write your answers in the spaces provided.

31. (a) What is meant by **fish sampling**? (2marks)

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- (b) Give **three** causes of fish mortality in a fish pond. (3marks)

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- (c) Explain **five** factors that affect the stocking rate of a fish pond. (5marks)

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32. (a) Distinguish between **technical efficiency** and **economic efficiency** in farming

(2 marks)

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(b) Give **four** roles of price in Agricultural production.

(4marks)

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(c) Explain **four** factors that influence price of a commodity.

(4marks)

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33. (a) Give **five** uses of phosphorus in plant nutrition.

(5marks)

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(b) Explain **five** conditions that may lead to soil pH being acidic.

(5marks)

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34. (a) Explain the following terms as used in simple machines.

(4marks)

(i) **Velocity ratio**

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(ii) **Work output**

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(iii) **Work input**

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(iv) **Energy wasted**

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(b) A load of **150N** was overcome by a machine through a distance of **20 metres** while an effort of **100N** applied to machine moved through a distance of **80N**. Calculate;

(i) **Work input**

(2marks)

(ii) **Work output**

(2marks)

(iii) **Energy wasted**

(2 marks)

35. (a) Give **one** function of each of the following components of a barbed wire fence.

(3marks)

(i) **Strainer post**

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(ii) **Ordinary post**

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(iii) **Droppers**

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(b) Give **four** differences between high tensile barbed wire and low tensile barbed wire.

(4marks)

High tensile barbed wire	Low tensile barbed wire

(c) Suggest **three** maintenance practices carried out on a barbed wire fence. (3marks)

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36. (a) Explain the following terms as used in animal nutrition.

(i) **Feeding standard**

(2marks)

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(ii) **Safety factor**

(2marks)

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(iii) **Starch equivalent**

(2marks)

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(b) Suggest **four** reasons for inclusion of safety factor in a ration.

(4marks)

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37. (a) What is meant by **herbicide selectivity**?

(2marks)

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(b) Explain **four** factors that contribute to selectivity of herbicides.

(4marks)

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(c) Give **four** advantages of using herbicides in control of weeds.

(4marks)

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