Name: ……. Centre/Index No: ……

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P515/1
PRINCIPLES
AND PRACTICES
OF AGRICULTURE
PAPER 1
July/August 2015
$2^1/_2$ 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		

Turn Over

SECTION A (30MARKS)

Write the letter corresponding to the best answer in the box provided.

1. A non-mutualistic role of bacteria in ruminant animals is that they;
   A. Secrete enzymes for hydrolysis of carbohydrates.
   B. Break down food into small fragments to ease enzyme action.
   C. Produce bacterial protein which is used by the ruminant.
   D. Are preyed on by the ruminant.

2. Which one of the following is not an adaption of plants to reduce water loss?
   A. Rolled up leaves
   B. Fewer and smaller leaves
   C. Leaves reduced to spines
   D. Alternate leaf arrangement.

3. Birds in a rice field were exposed to scare crow.
   For the first few days they got scared later ignored it. This is an example of:
   A. imprinting
   B. lalent learning
   C. habituation
   D. insight learning.

4. Prolonged anaerobic respiration in plants is not good because:
   A. so much energy is lost
   B. an oxygen debt is incurred
   C. ethanol produced becomes poisonous
   D. much carbon dioxide is produced.

5. The main advantage of biological control of pests, over the use of pesticides is that it.
   A. does not pollute the environment
   B. it is cheaper
   C. has longer lasting effects
   D. is non – discriminatory.

6. The opening of stomata during night and closure during day is an attempt to.
   A. stop gaseous exchange
   B. conserve water
   C. conserve energy
   D. lower the temperature.

7. Production of many pollen grains is an adaption for;
   A. cross pollination
   B. insect pollination
   C. wind pollination
   D. self-pollination

8. The first physical process that occurs during seed germination involves.
   A. imbibition
   B. osmosis
   C. active transport
   D. diffusion

9. Individuals lacking desired qualities are prevented from mating during artificial selection using the following methods except:
   A. extermination
   B. segregation
   C. cross- breeding
   D. sterilisation

10. Fats, yield more energy per unit mass molecule than carbohydrates because fats posse:
   A. more carbon atoms
   B. more hydrogen atoms
   C. fewer carbon atoms
   D. fewer oxygen atoms.

11. Predators in top trophic levels in a food chair are most severely affected by persistent pesticides because.
   A. their systems are highly sensitive to chemicals.
   B. they have rapid reproductive rates.
   C. they cannot store the pesticides in their tissue.
   D. the pesticides become concentrated in their prey.

12. Which one of the following methods of irrigation is best suited for arid areas.
   A. Overhead irrigation
   B. Surface irrigation
   C. Drip irrigation
   D. Sub-surface.

13. Which of the following is not a variable in put in farming.
   A. Land
   B. Feeds
   C. Labour
   D. Fertilizers

14. In a tractor engine, a dip stick is the tool used to:
   A. indicate the level of oil in the sump.
   B. indicate the level of fuel in the tank.
   C. apply grease to engine parts.
   D. operate the P.T.O.

15. Which one of the following machines only regulates seed rate and quantity to be planted per unit area?
   A. Broad caster
   B. Planter
   C. Seed driller
   D. Tuber machine.

16. The concentration of an acaricide in a plunge Dip is least affected by:
   A. evaporation in hot weather.
   B. leakage through the cracks
   C. leakage from the roof of the tank.
   D. sedimentation and fouling.

Turn Over

17. The main purpose of budgeting on a farm is to:-
    A. Prepare a balance sheet.
    B. Work out cash flow in the farm.
    C. Control cash expenditure.
    D. Estimate the expected returns.

18. Which of the following would be determined by marginal cost and marginal revenue?
    A. Net capital
    B. Net profit
    C. Net worth
    D. Maximum profit.

19. Death of plant tips and buds in tomatoes could be associated with shortage of:-
    A. Potassium
    B. Phosphorus
    C. Nitrogen
    D. Water.

20. Viruses resemble living organisms because they possess.
    A. a cell membrane
    B. a nucleus
    C. genetic material
    D. oxidative enzyme.

21. During the exhaustion of gases in 2-stroke engines,
    A. The piston moves downwards
    B. The piston moves upwards
    C. The transfer part is closed
    D. Both in let and outlet parts are open.

22. Which one of the following diseases is controlled by dipping cattle in acaricide.
    A. Foot and mouth disease.
    B. Anthrax
    C. Brucellosis
    D. Heart water

23. The ratio of cost of goods sold to the cost of average stock held in a given time is called.
    A. working capital
    B. return capital
    C. rate of stock turn over
    D. net valuation.

24. Calculate the value of goods available for sale when opening stock is Shs. 50,000/= Purchase Shs. 28000 and closing stock is Shs. 40,000/=
    A. Shs 370,000
    B. Shs. 240,000
    C. Shs. 190,000
    D. Shs. 330,000

25. Nitrogen fertilizers are often top dressed because they:
    A. are very volatile
    B. are highly soluble
    C. are very expensive
    D. impart their effects.

26. Birds are usually caponized in order to:
    A. Control vices
    B. Sterilize them
    C. Make them grow faster
    D. Increase disease resistance.

27. In an experiment, a boar weighing 20kg was given 240kg of feed.
    The final weight of the boar was 100kg.
    Which one of the following is the feed conversion ratio for the boar?
    A. 4:1
    B. 1:5
    C. 3:1
    D. 1:3

28. The ability of an enzyme to act on a specific substance depends on the enzyme's.
    A. molecular weight
    B. surface configuration
    C. protein nature
    D. activation energy.

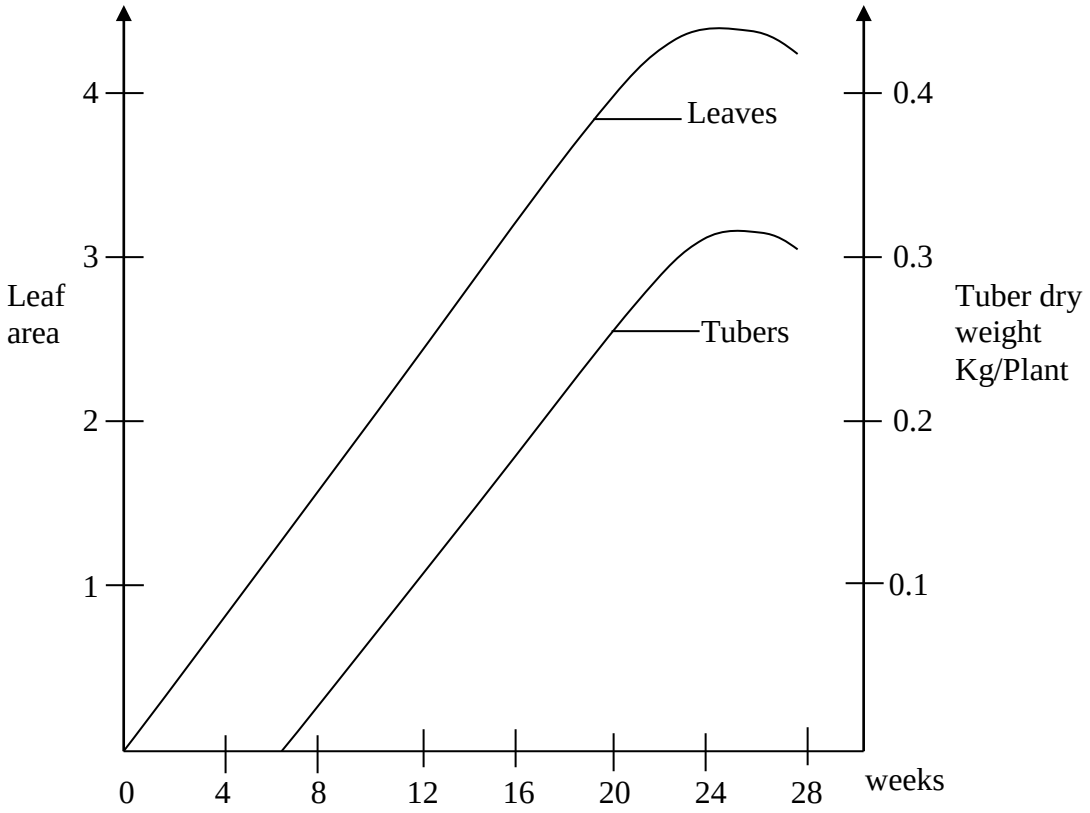
29. Increasing tyre traction in a tractor would have the following advantage.
    A. Increase engine out put
    B. Increase type wear and tear
    C. Increase tractor efficiency
    D. Reduce fuel consumption.

30. Minimum tillage is best illustrated during one of the following operations.
    A. Use of simple tools during cultivation.
    B. Use of fertilizers to encourage rapid growth.
    C. Use of Mulches in weed control.
    D. Use of ox-plough during cultivation.

Turn Over

SECTION B (70 MARKS)

31. At Kyambogo University farm, an experiment was carried out to show the rate of leaves formation and root tuber formation from planting to harvesting duration. Leaf area and tuber dry weight changes are used. Study the curve and answer the questions that follow.



(a) Describe the relationship between changes in leaf area and tuber weight. (04 marks)

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(b) Explain why the curve for tubers begins later and remains below the leaf area curve. (04marks)

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(c) Suggest what would happen to the curve if sweat potato weevils attacked the crop. (02marks)

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32. (a) Explain what is meant by the following terms in the study of nitrogen cycle.

(i) Mineralisation (01 mark)

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(ii) Nitrogen fixation (01 mark)

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(iii) Denitrification (01mark)

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(iv) Volatilisation (01 mark)

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(v) Immobilization (01 mark)

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(b) Give **three** symptoms on plants growing in a nitrogen deficiency soil.(03 marks)

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(c) State any **four** fertilizer compounds containing nitrogen. (02 marks)

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33. (a) Explain the nature of agricultural produce that make them hard to market. (5 marks)

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(b) State **five** advantages of collective marketing of agricultural produce by farmers. (5 marks)

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34. (a) Give the factors that may reduce the effectiveness of dipping cattle on the farm. (04 marks)

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(b) Explain briefly how uniform mixing of acarcids can be achieved. (04 marks)

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(c) Give reasons why the concentration of a dip wash should be kept above the recommended concentration. (02 marks)

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35. (a) What is an ecosystem? (02 marks)

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(b) Explain how modern Agricultural practices can affect the environment. (04marks)

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(c) Suggest how agricultural practices can be balanced with minimal effects on the environment (04 marks)

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36 (a) What is meant by land reform (02marks)

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(b) Explain some common land reform policies that have been undertaken by the government. (04marks)

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(c) Explain the role of land reform policies as far as agricultural production is concerned. (04 marks)

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37 (a) Currently the government is encouraging farmers to grow genetically modified crop varieties. State the advantages and limitations of using these crop varieties.

(i) Advantages. (03marks)

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(ii) Limitations. (03 marks)

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(b) Apart from using genetically modified crops, suggest other ways farmers can improve the performance of the crop industry. (04marks)

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