P515/1
Principles and practices of Agriculture
Paper 1
July/ August 2024
2 ½ hours.

Name…….....

School. …….....Signature……

NATIONAL EDUCATION RESEARCH & EXAMINATIONS BUREAU

UACE NEREB NATIONAL MOCKS 2024

PRINCIPLES AND PRACTICES OF AGRICULTURE

PAPER 1

(THEORY)

2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

- *This paper consists of sections **A** and **B**.*
- *Answer all questions in both sections **A** and **B***
- *Write the answers to section **A** in the boxes provided.*
- *Write answers to Section **B**, in the spaces provided.*

FOR EXAMINER'S USE ONLY		
SECTION	MARKS	EXAMINER'S INITIAL
A 1 – 30		
B 31		
32		
33		
34		
35		
36		
37		
TOTAL		

SECTION A (30 MARKS)

1. Which of the following methods is not used by government to stabilize prices of agricultural products?
   A. Buffer stock.
   B. Quota system.
   C. Stabilization of funds.
   D. Producing on contracts.

2. Which of the following disease are caused by viruses?
   A. Coccidiosis and Anthrax.
   B. Brucellosis and mastitis.
   C. New castle and foot and mouth disease.
   D. Rinder pest and milk fever.

3. During phototropism.
   A. Auxins are activated on the illuminated side of the shoot.
   B. More auxins are distributed to the dark side of the shoot.
   C. Auxins are destroyed on the light side of the shoot.
   D. More auxins move to the illuminated side of the shoot.

4. Which of the following describes the ability of a material to with stand shock without much damage or breakage?
   A. Ductility
   B. Brittleness
   C. Toughness
   D. Hardness

5. The most likely disease to have attacked maize when it has smoky grey inflorescence and fruit.
   A. Maize smut.
   B. Maize streak.
   C. Maize blight.
   D. Maize rust

6. The thickness and composition of the soil formed least depends on.

   A. Topography of the land.
   B. Rainfall and temperature of the area.
   C. The type of vegetation in the area.
   D. The system of farming in the area.

7. Which one of the following is a disadvantage of using potassium permanganate solution in carrying out a germination test in bean seeds?
   A. The purple colour remains persistent in un viable seeds.
   B. Viable seeds take long to decolourise the potassium permanganate solution.
   C. It is difficult to compute the germinability percentage.
   D. Some seeds will fail to germinate due to the destruction of the embryo by the chemical solution.

8. Digestible energy refers to the total energy.
   A. In the feed minus the energy lost in feaces.
   B. Contained in the feed consumed by the animal.
   C. In the feed minus the energy lost in urine.
   D. That is absorbed in the body of the animal.

9. Which of the following soil types is determined mainly by climate?
   A. Zonal soils
   B. Azonal soils.
   C. Intrazonal soil.
   D. Mollisols.

10. One advantage of using a spray race over a dip is that.

   A. The acaricide can be applied to pregnant and sick animals.
   B. There is better wetting of animals with the acaricide.
   C. It requires less attention from the operator.
   D. It is cheaper.

11. Which of the following does not affect the price elasticity of demand?
    A. The availability of substitutes.
    B. The degree of necessity of a product.
    C. Durability of a product.
    D. The number of people in an area.

12. Which one of the following describes the word ration as used in animal feeding?
    A. The amount of food required to keep the animal alive.
    B. The palatability of the feed.
    C. A mixture of feeds that meets an animal's body requirement in a day.
    D. The amount of feed eaten by an animal in a day.

13. The reason for aligning a nursery seed bed along a north-south direction is to
    A. Allow for even distribution of light in the nursery seed bed.
    B. Protect the seedlings from strong wind.
    C. Minimize transpiration of seedlings.
    D. Ease nursery bed operations.

14. Which one of the following may be a result of inbreeding in a population?
    A. Polyploidy.
    B. Improved fertility.
    C. Increased mutation rate.
    D. Increased homozygosity.

15. Which of the following are products of microbial fermentation in the rumen?
    A. Fatty acids and glycerol.
    B. Volatile fatty acids and ammonia.
    C. Peptones and peptides.
    D. Glucose and alcohol.

16. The following are activities involved in decision making in farm management.
    i. Collection of information.
    ii. Problem recognition.
    iii. Analysis of alternatives.
    iv. Taking action.

v. Making a decision.

Which one of the following is the correct order of the activities?

A. (i),(iii),(ii),(iv) and (v).
B. (iv), (ii), (i), (iii) and (v).
C. (ii), (i), (iii), (v) and (iv).
D. (ii), (i), (v), (iii) and (iv).

17. Plants growing under humid conditions lose excess water by

A. Transpiration
B. Cuticular transport
C. Guttation
D. Use of lenticels

18. Brass is used in moving parts of machines because of the following except.

A. Does not wear easily.
B. Is a good conductor of heat.
C. Is a good conductor of electricity.
D. Is resistant to corrosion.

19. Maximum profit in production is realized when

A. Marginal cost is greater than the marginal revenue.
B. Marginal revenue is greater than marginal cost.
C. Marginal cost equals marginal revenue.
D. Marginal revenue is at maximum.

20. Which of the following represents the correct sequence of stages in the development of spermatozoa?

A. Primary spermatocyte---Secondary spermatocyte---Spermatids.
B. Premordial germ cell---Primary spermatocyte---Secondary spermatocyte.
C. Primary spermatocyte---Spermatids---Secondary spermatocyte.
D. Premordial germ cell---Secondary spermatocyte---spermatids.

21. Which one of the following is not regarded as an asset on a balance sheet?
    A. Cash at the bank
    B. Net capital
    C. Cash from the sale of crops
    D. Debts receivable.

22. Which one of the following nutrients has the highest amount of potential energy per unit weight?
    A. Proteins.
    B. Vitamins
    C. Carbohydrates
    D. Fats.

23. Which one of the following is not a mounted tractor implement?
    A. Mould board plough.
    B. Disc harrows.
    C. Fertilizer distributor.
    D. Disc plough.

24. Soil that is fully wetted and allowed to drain freely is said to be.
    A. Saturated.
    B. At wilting point.
    C. At field capacity.
    D. Water logged.

25. Pulping coffee refers to the removing of the
    A. Red fleshy outer skin from the cherry.
    B. Parchment from the cherry.
    C. Mucilage from the cherry.
    D. Coffee husks from the cherry.

26. When a super –phosphate fertilizer is applied to a clay soil, crops may not show positive response mainly because
    A. Phosphates get fixed into soluble minerals once in the soil.
    B. Clay soils are usually water-logged and so dissolve the phosphate.
    C. Phosphate uptake by the crops is antagonized by the presence of other clay minerals.
    D. Clay soil encourages leaching of phosphates.

27. Which one of the following are utilized by-products resulting from microbial fermentation in the rumen?
    A. Glucose.
    B. Alcohol.
    C. Acetic acid.
    D. Carbon dioxide.

28. Sometimes back crossing in crops is used in establishing the
    A. Precious crosses.
    B. Phenotype
    C. Yield of the crop.
    D. Genotype.

29. Mushroom cultivation can be done on the following substrates except;
    A. Chicken manure.
    B. Cotton seed hulls
    C. Cotton straws.
    D. Wood shavings.

30. A driving wheel of 12 teeth drives another wheel of 25 teeth which has load of 120 N. if the effort used is 80N, what is the efficiency of the machine during its operation?
    A. 2.1%
    B. 1.5%
    C. 72%
    D. 2.08%

SECTION B (70 MARKS)

31. A test was carried out on 256 dried maize seeds using tetrazolium salt in an agriculture research station. The seeds were soaked in water for 2 hours and later cut longitudinally through their embryo into two halves to expose the endosperms. There after the halves were immersed in a solution of tetrazolium salt for 30 minutes. After the scheduled time, the endosperms of 396 halves were found not to have changed while those of the remaining halves had turned to colour pink.

a. (i).Why was the test carried out? (1mark)

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(ii).What was the purpose of soaking seeds? (1mark)

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(iii) Why was there no change in 396 halves? (1mark)

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(iv)What did the pink colour signify? (1mark)

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b. From the results of the test, calculate the germinability of the maize seeds. (4marks)

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c. With reason, state the suitability of the maize seeds for planting. (2marks)

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32. Table 1 below shows the concentration in parts per million (ppm) of a pesticide in the bodied of some organisms in an area, 20 years after the use of the pesticide. Use the information to answer the questions that follow.

Table 1.

Organism	**Concentration(ppm)**
Phytoplankton	0.06
Zooplankton	0.45
Tilapia	3.26
Fish eagle	14.40

a. From the data, explain the concentration of the pesticide in the phytoplankton in relation to that in the fish eagle. (5marks)

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b. From the information, what can be deduced about the type of pesticide used? (2marks)

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c. Explain the characteristics of a good pesticide. (3marks)

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33. (a).Give the meaning of the following terms:

(i).Profit and loss account. (1mark)

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(ii).Gross margin (1mark)

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(iii).Partial budget (1mark)

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(b).State four types of information required to make a farm budget. (4marks)

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(c) Give three constraints farmers face in making farm budgets. (3marks)

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34. (a)Give four ways in which digestion in ruminants is more beneficial to the animal than digestion in non-ruminants. (4marks)

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(b).Describe two symptoms of bloat in animals. (2marks)

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(c).Suggest two ways of;

i. Preventing bloat. (1mark)

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ii. Treating bloat. (1mark)

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(d).Explain the following terms as used in animal nutrition**.** (2marks)

i. Digestibility.

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ii. Production ration.

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35. (a) Differentiate between the terms power and energy as used in farm mechanization.

(2marks)

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(b) A pulley system of velocity ratio 3 supports a load of 20N given that the tension in each string is 8N.

Calculate;

i. Effort required to raise the load. (2marks)

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ii. Mechanical advantage. (2marks)

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iii. Efficiency. (2marks)

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(c).Give an example, describe how a wheel and axle can be used on the farm as a simple machine**.** (2marks)

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36. (a)Mention four reasons for bee swarming. (4marks)

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(b).Suggest four factors affecting quality of honey harvested. (4marks)

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(c).State four products other than honey obtained from bee keeping. (2marks)

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37. (a) Mention five husbandry practices that increases growth and yield in mushroom production. (5marks)

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(b).Suggest five challenges encountered in mushroom growing. (5marks)

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